

1.3.1- Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

Subject	Course	CROSS-CUTTING ISSUES	Topics
POLITICAL SCIENCE	Introduction to Political Theory	Human Values	Liberty
	Equality		
	Justice		
	Democracy		
	Rights		
	Citizenship & Minority Rights		
	Fundamental Rights and Directive principles		
Indian Government and politics	Indian Constitution & Institutional Functioning		
Democracy,	Democracy, Elections and Good Governance		Dimensions of Democracy: Social, Economic and Political Democracy, Core values of Social Democracy such as Freedom, Equality and Fraternity, Fundamental Rights, Right to equality, Right to freedom, Right against exploitation, Right to freedom of religion, Educational and cultural right, Right to constitutional remedies
ENVIRONMENTAL STUDIES	ENVIRONMENTAL STUDIES	Environment and Sustainability	Understanding Environmental
			Natural Resources
			Bio diversity and its conservation
			Environmental issues, policies and practices

Geography	Regional Planning and Development	Environment and Sustainability	1) Geography as the study of Environment 2) Definition, Scope and significance of Ecology
English	General English/ English Communication Skills	Professional ethics	Basic Language skills : Grammar and Usage Composition on Paragraph writing Letter writing (The formal and one Informal)
			Report-Writing
			Essay writing
Zoology and Botany		Environment and Sustainability	scope and significance of Ecology
			concept and broad types of Ecosystem
			Biodiversity: concept, importance

Co-curricular and Extracurricular Activities:

1. Environment and Sustainability :

Through tree plantation and other sustainable development programs, N.S.S. unit of the college promotes environmental protection. N.S.S. unit undertakes a host of activities in the nearby adopted village every year. N.S.S. organizes various environment related programs including blood donation camp, college campus cleanliness, railway station campus cleanliness, bus stand campus cleanliness, village cleanliness, tree plantation, etc. Various workshops, activities and invited talks are organized to create awareness about nature, biodiversity, environment and sustainability. Different activities such as installation of photo voltaic solar panel of 15 kv have been did by the college to save environment . Every year in the college, World Environment Day, N.S.S. Day, etc are organized . The college has taken active participation in Swachh Bharat Summer Abhiyan and Swachhta pakhwada programmes started by the government in collaboration of NGOs such as rotary club, lions club and rotryact club.

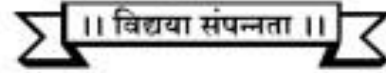
2. Human Values and Professional Ethics : Different social activities have been initiated by the college like Voter's awareness program by department of political science, Swchta vari, and Blood donation camps, by NSS. Through extra-curricular activities the college takes efforts for integration of ethical and human values. National festivals like Independence Day and Republic Day are organized by the college NCC unit .

3. Gender :The college has formulated three different committees to initiate activities related to gender sensitivity, prevention of sexual harassment and women empowerment .

**PUNYASHLOK AHILYADEVJI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR**



पुण्यश्लोक अहिल्यादेवी होळकर
सोलापूर विद्यापीठ



NAAC Accredited - 2015
'B' Grade (CGPA - 2.62)

Political Science

CBCS Syllabus BA-II

(Semester III & IV)

With effect from June, 2020-21

Preamble

The University Grants Commission (UGC) has initiated several measures to bring equity, efficiency and excellence in the Higher Education System of country. The important measures taken to enhance academic standards and quality in higher education include innovation and improvements in curriculum, teaching-learning process, examination and evaluation systems, besides governance and other matters. The UGC has formulated various regulations and guidelines from time to time to improve the higher education system and maintain minimum standards and quality across the Higher Educational Institutions (HEIs) in India. The academic reforms recommended by the UGC in the recent past have led to overall improvement in the higher education system. However, due to lot of diversity in the system of higher education, there are multiple approaches followed by universities towards examination, evaluation and grading system. While the HEIs must have the flexibility and freedom in designing the examination and evaluation methods that best fits the curriculum, syllabi and teaching-learning methods, there is a need to devise a sensible system for awarding the grades based on the performance of students. Presently the performance of the students is reported using the conventional system of marks secured in the examinations or grades or both. The conversion from marks to letter grades and the letter grades used vary widely across the HEIs in the country. This creates difficulty for the academia and the employers to understand and infer the performance of the students graduating from different universities and colleges based on grades. The grading system is considered to be better than the conventional marks system and hence it has been followed in the top institutions in India and abroad. So it is desirable to introduce uniform grading system. This will facilitate student mobility across institutions within and across countries and also enable potential employers to assess the performance of students. To bring in the desired uniformity, in grading system and method for computing the cumulative grade point average (CGPA) based on the performance of students in the examinations, the UGC has formulated these guidelines.

BA II (Political Science) (CBCS)

SEMESTER III

PAPER III

Introduction to Political Theory

[Credits: 04 Theory-(), Practicals-()]

Objective of the Course: - The course aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the application of the concepts.

Total Theory Lectures-(60)

Unit no: 1 (15)

Political Theory

- (a) Meaning
- (b) Nature and scope
- (c) Importance

Unit no: 2 (15)

State

- (a) Meaning
- (b) Elements of state,
- (c) Functions of state

Unit no: 3 (15)

Nation

- (a) Meaning
- (b) Elements of nation
- (c) Difference between state and nation

Unit no: 4 (15)

Sovereignty

- (a) Meaning.
- (b) Kinds of sovereignty
- (c) Features of sovereignty
- (d) Theory of Austin and Laski about sovereignty

बी.ए. भाग-२ राज्यशास्त्र
सत्र- तिसरे
पेपर तीन
राजकीय सिद्धांताची ओळख
सुधारित अभ्यासक्रम (CBCS) जून २०२० पासून

Total theory lecture-(60)

युनिट-०१	(१५)
राजकीय सिद्धांत	
(अ) अर्थ	
(ब) स्वरूप आणि व्याप्ती	
(क) महत्व	
युनिट-०२	(१५)
राज्य	
(अ) अर्थ	
(ब) राज्याचे घटक	
(क) राज्याची कार्ये	
युनिट-०३	(१५)
राष्ट्र	
अ) अर्थ	
ब) राष्ट्राचे घटक	
क) राज्य आणि राष्ट्र यामधील फरक	
युनिट-०४	(१५)
सार्वभौमत्व	
अ) अर्थ	
ब) सार्वभौमत्वाचे प्रकार	
क) सार्वभौमत्वाची वैशिष्ट्ये	
ड) सार्वभौमत्वाविषयी ऑस्टिन व लास्कीचा सिद्धांत	

Title of the Course/Paper
BA II (Political Science) (CBCS)
SEMESTER IV
PAPER V

Introduction to Political Theory

[Credits: 04 Theory-(), Practicals-()]

Objective of the Course: - The course aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the application of the concepts.

Total Theory Lectures-(60)

Unit no: 1 (15)

Power

- (a) Meaning
- (b) Influence and power

Unit no: 2 (15)

Authority

- (a) Meaning
- (b) Kinds
- (c) Features of authority

Unit no: 3 (15)

Legitimacy

- (a) Meaning.
- (b) Authority and legitimacy
- (c) Bases of Legitimacy

Unit no: 4 (15)

I) Liberty, Equality and Justice: Meaning and Types

II) Democracy

- (a) Meaning
- (b) Features of democracy
- (c) Kinds of democracy: Parliamentary and Presidential

बी.ए. भाग-२ राज्यशास्त्र
सत्र- चौथे
पेपर- पाच
राजकीय सिद्धांताची ओळख
सुधारित अभ्यासक्रम (CBCS) जून २०२० पासून

Total theory lecture-(60)

युनिट-०१

(१५)

सत्ता

(अ) अर्थ

(ब) प्रभाव आणि सत्ता

युनिट-०२

अधिसत्ता

(१५)

(अ) अर्थ

(ब) अधिसत्तेचे प्रकार

(क) अधिसत्तेची वैशिष्ट्ये

युनिट-०३

अधिमान्यता

(१५)

(अ) अर्थ

(ब) अधिसत्ता आणि अधिमान्यता

(क) अधिमान्यतेचे आधार

युनिट-०४

(१५)

I) स्वातंत्र्य, समता आणि न्याय: अर्थ आणि प्रकार

II) लोकशाही

अ) अर्थ

ब) लोकशाहीची वैशिष्ट्ये

क) लोकशाहीचे प्रकार- संसदीय आणि अध्यक्षीय

List of Reference Books:

- 1) E. Barker, Principles of Social & Political Theory, Calcutta, Oxford University Press, 1976
- 2) S.I. Benn & R.S. Peters, Social Principles & Democratic State, London, Geogre & Allen, 1959
- 3) A Brecht, Political Theory. The Foundation of Twentieth Century Political Thought, Bombay, The Times of India Press, 1963
- 4) M.Carnoy, The State & Political Theory, Princeton N.J. Princeton University Press. 1987.
- 5) D. Held, Models of Democracy, Cambridge, Policy Press, 1987.
- 6) D.Held, Political Theory & Modern State, Cambridge, Policy Press, 1989.
- 7) Laski H.J. – Grammer of Politics, Allen & Unwin, 1948.
- 8) Macpherson O.B. – Democratic Theory, Essays in Retrival, Oxford. The Claredon Press, 1977.
- 9) S. Ramswamy – Political Theory &: Ideas & Concepts, Delhi, Macmillan, 2002.
- 10) S.P. Verma – Modern Political Theory, New Delhi, Vikas, 1983.
- 11) Adi. H. Doctor, Issues in Political Theory.
- 12) Appadorai – The Substance of Politics.
- 13) B.C. Field – Political Theory
- 14) B.K. Gokhale , Poliical Scince, Himalaya Publishing House, New Delhi.
- 15) Oammen T. K. (1997), Citizenship, Nationality and Ethnicity, Rawat Publication, NewDelhi.
- 16) Dutt Sukumar (2004), Problem of Indian Nationality, Law Price Publication, New Delhi.

BA II (Political Science) (CBCS)

SEMESTER III

PAPER IV

MODERN INDIAN POLITICAL THOUGHT

[Credits: 04 Theory-(), Practicals-()]

Objective of the Course: - This is an introductory paper to the concepts, ideas and theories that developed in India. It highlights the main sources of the modern political tradition. It focuses on key thinkers from modern times to understand their seminal contribution to the evolution of political theorizing in India. It critically assesses their contribution and explains their relevance to contemporary times. It emphasizes on the distinctive contribution of Indian thinkers to political theorizing and the relative autonomy of Modern Indian Political Thought.

Total Theory Lectures-(60)

Unit no: 01

(15)

Raja Rammohan Roy

- (a) Social Reforms.
- (b) Political Thoughts.
- (c) The role of Roy in Indian renaissance.

Unit no: 02

(15)

Mahatma Phule

- (a) Views about British Rule.
- (b) Work of social reformation about – Women’s and Untouchability
- (c) Thoughts about Farmers

Unit no: 03

(15)

B. G. Tilak

- (d) Views about British Rule.
- (e) Nationalism.
- (f) Four – Fold Programme.

Unit no: 04

(15)

Mahatma Gandhi

- (a) Satya, Ahimsa and Satyagraha.
- (b) Concept of Swaraj
- (c) Theory of Trusteeship.

बी.ए. भाग 2 (राज्यशास्त्र)
सत्र तिसरे
पेपर चार
आधुनिक भारतातील राजकीय विचार
सीबीसीएस अभ्यासक्रम - जून 2020 पासून

युनिट 01

(15)

राजा राममोहन रॉय

- अ) सामाजिक सुधारणा
- ब) राजकीय विचार
- क) भारतीय प्रबोधनातील रॉय ची भूमिका

युनिट 02

(15)

महात्मा फुले

- अ) ब्रिटीश सत्तेविषयीचे विचार
- ब) सामाजिक सुधारणांचे कार्य - स्त्रिया आणि अस्पृश्यता
- क) शेतक-यांविषयी विचार

युनिट 03

(15)

लोकमान्य टिळक

- अ) ब्रिटीश सत्तेविषयीचे विचार
- ब) राष्ट्रवाद
- क) चतुःसूत्री कार्यक्रम

युनिट 04

(15)

महात्मा गांधी

- अ) सत्य, अहिंसा आणि सत्याग्रह
- ब) स्वराज्याची संकल्पना
- क) विश्वस्त सिध्दांत

BA II (Political Science) (CBCS)

SEMESTER IV

PAPER VI

MODERN INDIAN POLITICAL THOUGHT

[Credits: 04 Theory-(), Practicals-()]

Total Theory Lectures-(60)

Unit no: 1 (15)

Jawaharlal Nehru

- (a) Secular Nationalism
- (b) Democratic Socialism
- (c) Foreign Policy

Unit no: 2 (15)

Maulana Abul Kalam Azad

- (a) Religion and Politics
- (b) Nationalism
- (c) Democracy.

Unit no: 3 (15)

Dr. B.R. Ambedkar

- (a) Social Thought
- (b) State Socialism (Economic Thought)
- (c) Thoughts on Parliamentary Democracy and Conditions of democratic success.

Unit no: 4 (15)

R.M. Lohia

- (a) Caste and Language
- (b) Four Pillar of the State.
- (c) Democratic Socialism

बी.ए. भाग 2 (राज्यशास्त्र)
सत्र चौथे
पेपर सहा
आधुनिक भारतातील राजकीय विचार
सीबीसीएस अभ्यासक्रम - जून 2020 पासून

युनिट 01

(15)

पंडीत नेहरू

- अ) धर्मनिरपेक्ष राष्ट्रवाद
- ब) लोकशाही समाजवाद
- क) परराष्ट्र धोरण

युनिट 02

(15)

मौलाना अबुल कलाम आझाद

- अ) धर्म आणि राजकारण
- ब) राष्ट्रवाद
- क) लोकशाही

युनिट 03

(15)

डॉ. बाबासाहेब आंबेडकर

- अ) सामाजिक विचार
- ब) राज्य समाजवाद (आर्थिक विचार)
- क) संसदीय लोकशाही वरील विचार आणि लोकशाही यशस्वीतेच्या अटी

युनिट 04

(15)

डॉ. राममनोहर लोहिया

- अ) जात आणि भाषा
- ब) चौखंबा राज्य
- क) लोकशाही समाजवाद

Reference Books:

1. A. Appadurai, Indian Political Thinking, Oxford Press.
2. K. P. Karunakaran, Indian Politics from Dadabhai Naoroji to Gandhi : A Study of Political Ideas of Modern India, New Delhi, Gitanjali, 1975.
3. B. R. Nanda, Gokhale, Gandhi and Nehru: Studies in Indian Nationalism, London, Allan and Unwin, 1974.
4. V. P. Varma, Modern Indian Political Thought.
5. K. K. Kavlekar & A. S. Chousalkar (Ed.), Political Ideas and Leadership of Babasaheb Ambedkar.
6. Bose N. K., Studies in Gandhism.
7. Bhattacharya G. P., Evolution of Political Philosophy of M. N. roy.
8. Jatava D. R., The Political Philosophy of Dr. B. R. Ambedkar, Phoenix Publishing Agency, Agra, 1986.
9. Das N. S, the Political Philosophy of Jawaharlal Nehru, 1961.
10. Prasadchandra Dev, Political Ideas of Dr. Ram Manohar Lohia, New Delhi, Commonwealth, 1989.
11. D. R. Bhandarkar, Some Aspects of Ancient Hindu Polity. 12. Ram Manohar Lohia, The Wheel of History, Hyderabad, Lohia Samiti, 1963.
12. ----"---- Marx, Gandhi and Socialism, Hyderabad, Navhind, 1956.
13. पाटील बी. बी. भारतीय राजकीय विचार, फडके प्रकाशन, कोल्हापूर
14. वराडकर र. घ. भारतीय राजकीय विचार, निराली प्रकाशन, पुणे
15. फाटक न. र. न्या. महादेव गोविंद रानडे यांचे चरित्र, मौज प्रकाशन, मुंबई
16. तळवळकर गोविंद, नवरोजी ते नेहरू, कॉन्टिनेंटल प्रकाशन, मुंबई
17. कुबेर वा. ना. डॉ. आंबेडकर विचारमंथन, केसरी, पुणे
18. चोपडे किसन, आधुनिक भारतातील राजकीय विचार, कैलास प्रकाशन, औरंगाबाद
19. भोळे भा.ल. आधुनिक भारतातील राजकीय विचार, पिंपळापुरे प्रकाशन, नागपूर

BA II (Political Science) (CBCS)

SEMESTER III

PAPER- IDS

PUBLIC ADMINISTRATION

[Credits: 04 Theory-(), Practicals-()]

Objective of the Course: - The paper is an introductory course in Public Administration. The essence of public administration lies in its effectiveness in translating the governing philosophy into programmes, policies and activities and making it a part of community living. The paper covers personnel public administration in its historical context thereby proceeding to highlight several of its categories, which have developed administrative salience and capabilities to deal with process of change.

Total Theory Lectures-(60)

Unit no: 1 (15)

Public Administration

- (a) Meaning, Definition.
- (b) Nature, Scope and Importance.
- (c) Public and Private Administration.

Unit no: 2 (15)

Principles of Organization

- (a) Hierarchy.
- (b) Span of Control
- (c) Unity of Command
- (d) Co-ordination

Unit no: 3 (15)

Units of Organization

- (e) Staff and Line Agencies
- (f) Department – Bases of Departmental Organization

Unit no: 4 (15)

Public Corporations

- (g) Characteristics.
- (h) Ministerial and Parliamentary control over Public Corporation
- (i) Challenges of Privatization in front of Public Corporation

बी.ए. भाग - 2, राज्यशास्त्र
सत्र - तिसरे
पेपर - आंतरविद्याशाखीय (आय.डी.एस.)
लोकप्रशासन
सीबीसीएस अभ्यासक्रम जून 2020 पासून

युनिट 01

लोकप्रशासन (15)

अ) अर्थ, व्याख्या

ब) स्वरूप, व्याप्ती व महत्व

क) लोकप्रशासन आणि खाजगी प्रशासन

युनिट 02

(15)

संघटनेची तत्वे

अ) पदसोपान

ब) नियंत्रण कक्षा

क) आज्ञेक्य

ड) समन्वय

युनिट 03

(15)

संघटनेचे घटक

अ) सल्लागार व रेषा घटक

ब) खाते (विभाग) - खात्याचे आधारभूत घटक

युनिट 04

(15)

लोकनिगम (सार्वजनिक प्रमंडळे)

अ) वैशिष्ट्ये

ब) लोकनिगमांवरील मंत्रीमंडळ व संसदेचे नियंत्रण

क) लोकनिगमांपुढील खाजगीकरणाची आव्हाने

BA II (Political Science) (CBCS)

SEMESTER IV

PAPER- IDS

PUBLIC ADMINISTRATION

[Credits: 04 Theory-(), Practicals-()]

Objective of the Course: - The paper is an introductory course in Public Administration. The essence of public administration lies in its effectiveness in translating the governing philosophy into programmes, policies and activities and making it a part of community living. The paper covers personnel public administration in its historical context thereby proceeding to highlight several of its categories, which have developed administrative salience and capabilities to deal with process of change.

Total Theory Lectures-(60)

Unit no: 01 (15)

Financial Administration (With reference to India)

- (a) Preparation and Passing of Budget
- (b) Financial Committees
 - (1) Estimate Committee
 - (2) Public Accounts Committee
 - (3) Committee on Public Undertakings

Unit no: 02 (15)

Public Policy

- (a) Definition,
- (b) Characteristics and Models

Unit no: 03 (15)

Citizen and Administration interface

- A) RTI
- B) Lokpal
- C) Citizens Charter and E-Governance.

Unit no: 04 (15)

Social Welfare Policies

- Education: Right to Education
- Health: National Health Mission
- Food: Right to food Security
- Employment: MNREGA

बी.ए. भाग - 2, राज्यशास्त्र
सत्र - चौथे
पेपर - आंतरविद्याशाखीय (आय.डी.एस.)
लोकप्रशासन
सीबीसीएस अभ्यासक्रम जून 2020 पासून

युनिट 01 (15)

वित्तीय प्रशासन (भारताच्या संदर्भात)

अ) अंदाजपत्रकाची तयारी आणि मंजूरी

ब) संसदीय वित्तीय समित्या

1) अंदाज समिती

2) सार्वजनिक हिशोब (लोकलेखा) समिती

3) लोकोद्योग समिती

युनिट 02 (15)

सार्वजनिक धोरण

अ) अर्थ

ब) वैशिष्ट्ये आणि प्रकार

युनिट 03 (15)

नागरिक आणि प्रशासन यातील आंतरसंबंध

अ) माहितीचा अधिकार

ब) लोकपाल

क) नागरी सनद आणि ई-गव्हर्नन्स

युनिट 04 (15)

समाज कल्याणात्मक धोरणे

शिक्षण- शैक्षणिक अधिकार

आरोग्य- राष्ट्रीय आरोग्य मिशन

अन्नधान्य- अन्नधान्य सुरक्षा अधिकार

रोजगार- मनरेगा

Reference Books:

1. White L. D.: Introduction to the Study of Public Administration.
2. Avasthi A. Maheshwari: Public Administration, (Agra, Laxminagar, Agrawal, 1962).
3. Nigro F. A. & Nigro L. G.: Modern Public Administration.
4. Barber Michael P. : Handbook of Public Administration.19
5. Bhambhari C. P.: Public Administration.
6. Sharma M. P.: Public Administration in theory and practice.
7. T. Dye, (2002) Understanding Public Policy, New Delhi, Pearson.
8. पाटील बी. बी. लोकप्रशासन, फडके प्रकाशन, कोल्हापूर
9. इनामदार ना. र. लोकप्रशासन, काँन्टीनेन्टल, पुणे
10. गर्दे दि. का. लोकप्रशासन, मंगेश प्रकाशन, नागपूर
11. काणे पी. सी. विद्या प्रकाशन, नागपूर
12. के. सागर. लोकप्रशासन के सागर प्रकाशन, पुणे

Equivalent Subject for Old Syllabus

Sr. No.	Name of the Old Paper	Name of the New Paper
१	Introduction to Political Theory (Sem. III)	Introduction to Political Theory (Sem. III)
२	Introduction to Political Theory (Sem. IV)	Introduction to Political Theory (Sem. IV)
३	MODERN INDIAN POLITICAL THOUGHT (Sem. III)	MODERN INDIAN POLITICAL THOUGHT (Sem. III)
४	MODERN INDIAN POLITICAL THOUGHT (Sem. IV)	MODERN INDIAN POLITICAL THOUGHT (Sem. IV)
५	PUBLIC ADMINISTRATION (I.D.S.) (Sem. III)	PUBLIC ADMINISTRATION (I.D.S.) (Sem. III)
६	PUBLIC ADMINISTRATION (I.D.S.) (Sem. IV)	PUBLIC ADMINISTRATION (I.D.S.) (Sem. IV)

Solapur University, Solapur
Nature of Question Paper for (CBCS) Semester Pattern

• Faculty of Humanities

(UG Courses)

(BA.II Political Science)

(w.e.f. June 2020)

Time – 2.00 Hours

Total Marks– 40 Marks

Instruction – (1) All questions are Compulsory.

(2) Figures to the right indicate full marks.

Q. 1) Multiple choice questions (08 Question) 08 Marks

(With four alternatives)

Q. 2) Write short Answers of the following 12 Marks

(Any 04 out of 06)

Q. 3) Answer any one long type question of the following 10 Marks

A

OR

B

Q. 4) Long answer type question 10 Marks

Democracy, Elections and Good Governance



सोलापूर विद्यापीठ

॥ विद्यया संपन्नता ॥

NAAC Accredited-2015
'B' Grade (CGPA-2.62)



I. Democracy

A. Introduction

Democracy is derived from the Greek word *Krates* meaning power or rule. Democracy thus means rule of the demos (the demos referring to the people, although the Greeks originally used this to mean the poor or the many. Thus democracy essentially links to the government to the people and hence Abraham Lincoln's famous definition of Democracy is government of the people, by the people and for the people rightly expresses the spirit of democracy.

Very broadly, democracy may mean the following

1. The system of rule by the poor and disadvantaged.
2. A form of government in which the people rule themselves directly and without the need for professional politicians or public officials.
3. A society based on equal opportunity and individual merit rather than hierarchy and privileges.
4. A system of welfare and redistribution aimed at narrow social inequalities.
5. A system of decision making based on the Principle of majority rule
6. A system of rule that secures the right and interests of minorities by placing checks upon the power of the majority.
7. A means of filling public offices through a competitive struggle for the popular vote.
8. A system of government that serves the interest of people regardless of their participation in political life.

Democracy is broadly classified as:

- Direct Democracy and
- Representative Democracy

Direct Democracy is also called as participatory democracy this was the first ever model of democracy introduced in the Greek city state of Athens in 3rd century BC. In this form of democracy, citizens participated in the affairs of the state directly and had a say in the governance of the city state. Every citizen had a political right in this state. (women and slaves were not allowed to participate). Direct democracy thus obliterates the distinction between government and the governed and between the state and civil society.

Features of Direct Democracy

It heightens the control that citizens can exercise over their own destinies as it is the only pure form of government.

It creates a better informed and more politically sophisticated citizens.

It enables the public to express their own views and interests without having to rely in self-serving politicians

Representative Democracy: It is also called limited or indirect democracy. The narrow meaning of representative democracy as understood by many is periodic voting after a stipulated time (in case of India it is every five years). However the larger meaning of democracy is full participation in the day to day affairs of governance. The process of election is essentially to establish a link between the government and the governed.

Features of Representative Democracy:

It is a practicable form of democracy.

It relieves ordinary citizens the burden of decision making thus possible a division of labour in politics.

It allows governed to be placed in the hands of those with better education, expert knowledge and greater experience.

Principles of Democracy are as follows

1. **Government by consent:** democracy is government by consent of the people. Rational consent can be obtained by persuasion for which an atmosphere of free discussion is essential. Consent is obtained at two levels.
 - A) Among the representatives of the people in the legislative assemblies where members of the opposition have their full say and
 - B) At a public level where there is a direct communication between the leadership and the people.
2. **Public Accountability:** It essentially means the representatives must remain answerable to the people. As we have seen earlier that democracy essentially is based on public consent, therefore it is implied that the government should be responsible and responsive to the people. Whatever will and aspirations of the people are, the government should attempt to fulfil/realise those if they fall well within the constitutional framework of the country.
3. **Majority Rule:** In modern representative democracies, decisions are taken in several bodies right from electing the government to the committees that are constituted. It is considered to be the heart of the democratic system that all issues in all the bodies from legislature to cabinet, executives and other committees are resolved through majority decisions. Political equality is secured by the principle of one man on vote, which implies that there will be no privileged sections claiming special weightage nor any underprivileged section whose voice is ignored. No discrimination is allowed on grounds of religion, race caste, sex, place of birth or ownership of property. The principle of majority rule relies on the wisdom of the majority.

BOX1: Popular Sovereignty:

It means people's rule. The authority of the State and government is created and sustained by the consent of its people, through their elected representatives. It means people are supreme authority and not the elected representatives.

BOX 2: Constitutional Supremacy

As the rule book the constitution is supreme and not the Parliament. The laws emanating from the constitution should supersede all laws

4. **Constitutional government and Rule of Law:** Constitutional government means government by law rather than by men. Democracy requires an infinitely complex machinery of process, procedures and institutions to translate the majority will into action. If one compromises with the law, rampant corruption and decay of democracy is ensured. It is, therefore, essential to have a well-established tradition of law and constitution for the stability of a democratic government.

Dimensions of Democracy: Social, Economic and Political Democracy**Social Democracy**

Definition a democratic welfare state that incorporates both capitalist and socialist practices.

Meaning: Social Democracy is a political, social and economic ideology that supports economic and social interventions to promote social justice within the framework of a capitalist economy, as well as a policy regime involving a commitment to representative democracy, measures for income redistribution, and regulation of the economy in the general interest and welfare state provisions. Social democracy thus aims to create the conditions for capitalism to lead to greater democratic, egalitarian and solidaristic outcomes; and is often associated with the set of socioeconomic policies that became prominent in Northern and Western Europe. In India Dr. B.R Ambedkar the Chairman of the Drafting Committee of the Constitution strongly advocated for Social Democracy.

Core values of Social Democracy are as follows.

1. **Freedom, Equality and Fraternity:** This was the battle-cry of the French Revolution; and these broadly remain the core values of democratic parties today. The formulation of core values began in the nineteenth century with the rise of the bourgeoisie and they began to conquer the world at the latest in the mid-twentieth century – they came to be the standard by which states and societies were judged.

2. **This is also reflected in the legal foundations of the United Nations.** With the UN's two Human Rights Covenants of 1966 the fundamental civic, political, economic, social and cultural rights attained the apex of their legitimacy and have been ratified by almost every country in the world. They constitute something like a global legal foundation. Fundamental rights are supposed to ensure the transposition of core values into formal legal claims.

3. **Fundamental Rights:** These are the rights enshrined in the constitutions of democratic countries. These are claims that individuals have in a state. In India, Fundamental Rights are enshrined in Part III of the constitution. If the fundamental rights are abridged by any individual or the state, any citizen can move the Supreme Court or the High courts.

BOX 3: Six Fundamental Rights:

- Right to equality
- Right to freedom
- Right against exploitation
- Right to freedom of religion
- Educational and cultural right
- Right to constitutional remedies

Economic democracy

Economic democracy or stakeholder democracy is a socioeconomic philosophy that proposes to shift decision-making power from corporate managers and corporate shareholders to a larger group of public stakeholders that includes workers, customers, suppliers, neighbours and the broader public. No single definition or approach encompasses economic democracy, but most proponents claim that modern property relations externalize costs, subordinate the general well-being to private profit, and deny the polity a democratic voice in economic policy decisions. In addition to these moral concerns, economic democracy makes practical claims, such as that it can compensate for capitalism's inherent effective demand gap.

Political Democracy

Political Democracy is a means for the people to choose their leaders and to hold their leaders accountable for their policies and their conduct in office. The people decide who will represent them in parliament, and who will head the government at the national and local levels. They do so by choosing between competing parties in regular, free and fair elections. Government is based on the consent of the governed. In a democracy, the people are sovereign—they are the highest form of political authority. Power flows from the people to the leaders of government, who hold power only temporarily. Political Democracy is a means for the people to choose their leaders and to hold their leaders accountable for their policies and their conduct in office. The people decide who will represent them in parliament, and who will head the government at the national and local levels. They do so by choosing between competing parties in regular, free and fair elections. Government is based on the consent of the governed. In a democracy, the people are sovereign—they are the highest form of political authority. Power flows from the people to the leaders of government, who hold power only temporarily.

B. Decentralisation:

Decentralisation can be usefully understood as a political process whereby administrative authority, public resources and responsibilities are transferred from central government agencies to lower-level organs of government or to non-governmental bodies, such as community-based organisations (CBOs), third party non-governmental organisations (NGOs) or private sector actors

In 1993, the Government of India passed a series of constitutional reforms, which were intended to empower and democratise India's rural representative bodies – the Panchayats.

The 73rd Amendment to the Constitution formally recognised a third tier of government at the sub-State level, thereby creating the legal conditions for local self-rule – or Panchayati Raj. Since this time, the process of decentralisation has been highly variable, ranging from ambitious attempts at Gram Swaraj (or village self-rule).

Box 4: Political, administrative and fiscal decentralisation.

Political decentralisation transfers policy and legislative powers from central government to autonomous, lower-level assemblies and local councils that have been democratically elected by their constituencies. Administrative decentralisation places planning and implementation responsibility in the hands of locally situated civil servants and these local civil servants are under the jurisdiction of elected local governments. Fiscal decentralisation accords substantial revenue and expenditure authority to intermediate and local governments.

Source: World Bank

Defining features of Decentralisation:

- popular control of policy makers, both by regular elections and by the pressure of social interest groups;
- the institutionalisation of all adult citizens in voting (i.e. one person, one vote);
- political freedom in the eyes of the state;
- policy decisions made on the basis of majority rule

What makes local institutions accountable?

In this section, we consider three broad conditions under which local institutions can be made more accountable to poor and politically marginal groups:

- an active citizenry, whose participation in broad areas of political life, such as voting, campaigning, attending meetings, running for office, lobbying representatives, etc., serves to

counter balance the arbitrary use of power;

- fiscal and political support from higher level authorities within government;
- the existence of competitive political parties whose legitimacy depends at least in part on the ability to support the needs of the poor.

C. Challenges before Democracy

The basic challenges before democracy in India are poverty, illiteracy, lower participation, criminalisation of politics, political violence, corruption, communalism, Regionalism. Apart from this the two very crucial areas of (non)participation are women and marginalised sections.

Women

After family, patriarchy exists most in politics. Women are always considered to be the secondary citizens of the country. Hence, the opportunities for participation are minimal to them. In most cases they do not even have the right to select their own candidates and are often forced to vote for a candidate who the head of the family (generally male) asks to. If at all women come out to vote during various elections from parliamentary to state legislature to the local bodies of Municipal corporations, municipal councils, the zilla-parishads to panchayat samities to the gram panchayat, the turnout is generally very low. As regards contesting elections women though 33% reservation is available very few women volunteer for the same. As the posts are reserved the political families or the male members of the family operate from behind the curtain.

Marginalised population:

As regards the marginalised sections (the dalits, the tribals, casual workers, fisher folks, construction, migrated and labour, the voting percentage is very low. The government machinery cannot all the time attempt to bring them to the main stream. Hence community initiatives are most needed in this sphere. These marginalised groups are not even registered voters and hence a large number of people are out of the fray of election and in turn democratic process. It is therefore imperative to bring these people into the political sphere of the country.

Multiple choice questions on Chapter I Democracy

- 1) Indirect Democracy is also called as _____ democracy.
a. Representative b. Royal c. Negative d. Old
- 2) Direct democracy was started in _____ in 3rd century B.C.
a. India b. England c. Athens d. America
- 3) _____ are supreme authority in the Representative Democracy.
a. Leaders b. Parties c. People d. Kings
- 4) Constitutional government means government by _____.
a. law b. men c. dictator d. mob
- 5) In India Dr. B. R. Ambedkar strongly advocated for _____ democracy.
a. political b. social c. limited d. none of these
- 6) How many fundamental rights are included in the Indian constitution?
a. four b. six c. two d. ten
- 7) How many percent of seats in the local bodies are reserved for Women in India?
a. 33% b. 15% c. 70% d. 27%
- 8) Dalits, Tribals, Casual workers, Fisher folks are considered as _____ sections in India.
a. advanced b. marginalised c. ruling d. none of these
- 9) In representative democracy the process of _____ links the government and the people.
a. judiciary b. election c. dictatorship d. corruption
- 10) Public Accountability means the representative must remain _____ to the people.
a. opposite b. answerable c. irresponsible d. none of these

Answer Key**Multiple choice questions on Chapter I Democracy**

- | | | | |
|------|-------|------|------|
| 1) a | 2) c | 3) c | 4) a |
| 5) b | 6) b | 7) a | 8) b |
| 9) b | 10) b | | |

Election Local Self Government Bodies

India is considered as one of the largest functional democracy in the world. This democratic Experiment has withstood the test of the time, it has been possible because we have been able to conduct free and fair elections at regular interval (Except during 1976 Emergency). The constitution of India guarantees its people to choose their representatives and people who govern them. This takes place through elections at following three levels.

National Level :

At this level people directly elect their representatives to the House of People i.e. Lok Sabha for a period of Five years. The person elected thus is a representatives of that particular area or constituency in the parliament E.g. Lok Sabha has 543 members which are directly elected by the people through the first past the post system. People cast their votes for candidates belonging to a variety of political parties. The one who secures highest number of votes is declared elected. Members of the Council of States i.e. Rajya Sabha are indirectly elected by members of Lok Sabha and members of the state legislative assembly.

State Level :

The parliamentary form of government has been adopted at the state level as well. At this level people of a particular state directly elect their representatives to the state legislative Assembly i.e. Vidhan Sabha for a period of five years. The person elected thus is a representative of particular area or constituency from a state in the state legislature. E.g. State legislature of Maharashtra has 288 members in the Vidhan Saba which are directly elected by the people of the state of Maharashtra.

Local Level :

In order to achieve ideals of good governance the constitution of India Since 1990's has added on more tier to the government, in the form of local self-governing bodies, both in rural and urban areas. In this part of the chapter we shall go into details of Urban and Rural Local Body Elections.

Institutions at the Local Level :

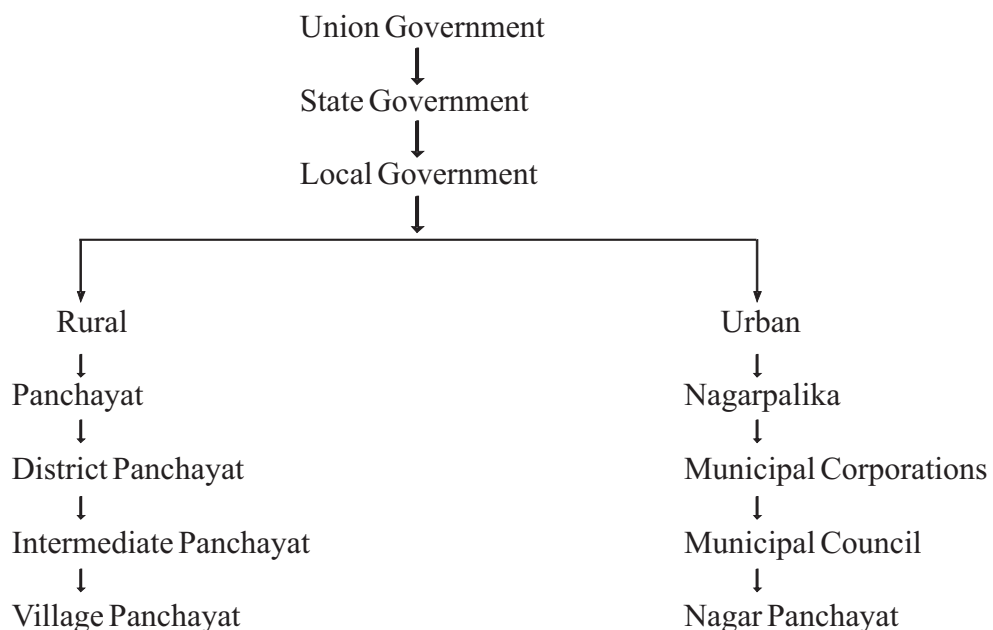
The geographical length and breadth of our country coupled with unimaginable socio cultural diversity makes her a unique nation state. In addition to this a huge population poses many governance challenges before us. Our constitution has divided the powers and functions between the union and state in the form of three lists mentioned in part VII of the constitution. But with changing times and growing expanse of governance, it was realized that a government is needed which is closer to people, where people are part of the governing process and also a part of electing their own local representatives to address their local problems and concern. To this effect in 1993 two historic constitutional amendments were passed by the Indian Parliament. The 73rd CAA and 74th CAA celebrate the spirit of local democracy and local governance in India.

Constitutional Provisions of the 73rd & 74th Constitutional Amendment Acts :

The 73rd and 74th Amendment to the Constitution of India has given legal sanctity to the Panchayat Raj System in rural areas and Municipal Governance in Urban areas. India has a chequered history of local self-governing bodies working at the local level. The council of five elderly members from a village i.e. Panchayat existed in India since time immemorial. Sir Charles Metcalf called these village communities as Little Republics. But with the passage of time these communities became dysfunctional. After independence, through the recommendations of various

committees like Balwant Rai Mehta Committee, Ashok Mehta committee and others, Indian government tried to revive these institutions. But unfortunately they all failed miserably. However with the onset of liberal reforms in 1990's the process of decentralisation also gained momentum. And finally in 1993 73rd and 74th CAA were passed by the Indian Parliament. These acts implement Article 40 of the DPSP. It added Part XI and XI A to the constitution. It covers Article 243 to 243 O which relates to Panchayat Raj System in rural area and Article 243 P to 243 ZG which relates to urban local governance in India. These acts also added two schedules to the constitution, namely 11th and 12th schedule. The 11th schedule prescribes a list of 29 functions to be performed by rural local bodies and 12th schedule prescribes a list of 18 functions to be performed by the urban local bodies.

These two acts have added third tier to the federal frame work of our Government and thus it makes India a unique three tier federal democratic polity in the world. The following flow chart explains this :



Important features of the 73rd and 74th Constitutional Amendment Acts :

1) Gram Sabha or Ward Sabha (Meetings) :

It is a deliberative body at the grassroots level. It comprises of all the registered voters in a village in rural areas or a ward in an urban area. It is the foundation of local democracy and process of decentralization of powers in India. People at grassroots level can directly participate in the meetings of Gram Sabha or Ward Meeting. Where they can discuss issues concerning them, offer suggestions, question their representatives and also approve the plans and budgets prepared by their representatives. In a way it's miniature of the parliament of India at the grassroots level.

2) Reservation of seats for SC/ST and Women :

In order to provide fair and equal representation to all the sections of the society, seats are reserved for SC, ST in proportion to their population. Along with this, one third seats are also reserved for women candidates. States like Maharashtra, Madhya Pradesh, Gujarat now reserve fifty per cent of the seats in their Panchayati raj Institutions.

3) State Election Commission :

This amendment provides for the establishment of the State Election Commission for conduct of elections to the urban and rural local self government . This consist of Municipal Corporation, Municipal Councils, Nagar Panchayats in Urban areas and Zilla Parishads, Panchayat Samities, Village Panchayats in rural area. This amendment made provision of Article 243-K and 243-ZA wherein State Election Commission were established. The main objective for 73rd and 74th amendment and making this provision was to create independent status of State Election Commission to that elections are conducted in free and fair, without other intervention.

Role of an individual towards electoral process at the local level :

Democracy as a system and as a ay of life becomes meaningful only when there is active participation of people in the electoral process. Following suggested activities help us understand our role as a citizen and as an individual in the electoral process.

Suggested Activities :

- 1) Find out the name of elected local representative from your rural or urban area in which you live. What promises he made at the time of election ad how much work he had done in your area?
- 2) Register yourself in the voters list of your area of residence, to be able vote at the time of National, State or local Elections. If you shift your residence then you also must shift your name to the voters list of that area. Voter registration can now be done online as well.
- 3) Visit a Local body E.g. Gram Panchayat or Municipal Corporation or Zilla Parishad.
- 4) Attend a Gram Sabha or Ward Meeting in your own area.
- 5) Find out what functions rural or urban local bodies are supposed to perform in your Area.
- 6) Find out what are the problems, challenges and concerns of your area. What steps local body has taken to address the same ?
- 7) Find out the name of political parties which contested election in your area last time. What was their electoral manifesto or agenda? How far the party has been able to address the local concerns? What is their party ideology ? What is their party symbol ?

Multiple choice questions on Chapter II Elections

- 1) At the national level Indians directly elect their representatives to _____.
a) Loksabha b) Rajysabha c) Vidhansabha d) Vidahn Parishad
- 2) Loksabha has _____ members which are directly elected by the people.
a) 250 b) 543 c) 500 d) 750
- 3) Members of Rajyasabha are _____ elected.
a) directly b) indirectly c) privately d) none of these
- 4) Maharashtra Vidhansabha has _____ members.
a) 543 b) 244 c) 288 d) 250
- 5) _____ is miniature of the Parliament of India at the grassroots level.
a) Loksabha b) Vidhanparishad c) Gramsabha d) Rajysabha
- 6) The 73rd and Amendment to the Constitution of India has given _____ sanctity to the Panchayat Raj System in rural arrears
a) legal b) moral c) historic d) geographical
- 7) The 73rd and 74th constitutional amendment acts have added third tier to the federal framework of our government which is known as _____ government.
a) central b) state c) national d) local
- 8) In the Panchayati Raj institutions of Maharashtra _____ seats are reserved for women candidates.
a) 50% b) 30% c) 33% d) none of these
- 9) In rural and urban local government, seats are reserved for Scheduled Castes and Scheduled Tribes in _____ to their population.
a) 33% b) 50% c) proportion d) 25%
- 10) Municipal Corporation is part of the _____ local self government.
a) urban b) rural c) both d) central

Answer Key**Multiple Choice Questions - Elections**

- | | | | | |
|------|------|------|------|-------|
| 1) a | 2) b | 3) b | 4) c | 5) c |
| 6) a | 7) d | 8) a | 9) c | 10) a |

Good Governance

Introduction:

Governance has been defined to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment and broad based participation. When a government sticks to these principles while making policies and implementing them, it is said to be good governance. Let us now look at the concept of Good Governance in detail.

Meaning of Good Governance:

In 1989, the concept of 'governance' was for the first time highlighted in a World Bank study 'Sub-Saharan Africa-from Crisis to Sustainable Growth' to describe the need for institutional reform and a better and more efficient public sector in Sub-Saharan countries. The study report mentioned four key dimensions of good governance:

- i. Public sector management
- ii. Accountability
- iii. Legal framework for development
- iv. Information and transparency

For a country like India where democracy forms the base of all the governing systems, governance needs to be inclusive and is largely determined by the participation of its people. In a democracy like ours, a system of governance which is accountable and transparent demands the participation of people at every level. People's participation on one hand can help the government formulate better policies which can be communicated to the society again through participation and also implemented well with its help. If policies of the government are inclusive and people friendly, it would help encourage the participation of citizens in the mainstream political process. In turn, when people participate directly- by contesting or indirectly by voting or by being a part of the electoral process, it would help strengthen the government and would help in bringing more people friendly policies. Good governance thus has to be understood as a two way process- the government should ensure that the values of good governance like accountability and transparency are taken care of while framing policies while on the other hand, people should participate in the process of governance to make it better.

After having a detailed discussion about the origin, development and meaning of good governance, let us try to understand the essential components of good governance reflected in the various documents and study reports of international organisations, policy makers and in the writings of the researchers and academicians.

Characteristics of Good Governance:

1. Participation:

The first characteristic refers to equal participation by all members of society as the key element of good governance, with everyone having a role in the process of decision-making. Participation could be either direct or through legitimate intermediate institutions or representatives. Participation needs to be informed and organized. This means freedom of association and expression on the one hand and an organized civil society on the other hand. All the section of society should be allowed to express their concerns in the policy making influencing them without any fear and discrimination.

2. Rule of Law:

Good governance requires fair legal frameworks that are enforced impartially. It also requires full protection of human rights, particularly those of minorities. Impartial enforcement of laws requires an independent judiciary and an impartial and incorruptible police force. It also involves provision of free legal aid to the poor and needy people who cannot afford to pay to the legal practitioner. It focuses on judicial and legislative reforms and the importance of legal education and training.

3. Transparency:

Transparency means that decisions taken and their enforcement are done in a manner that follows rules and regulations. It also means that information is freely available and directly accessible to those who will be affected by such decisions and their enforcement. It also means that enough information is provided and that it is provided in easily understandable forms and media.

4. Responsiveness:

Good governance requires that institutions and processes try to serve all stakeholders within a reasonable timeframe. By being responsive, governmental institutions gain legitimacy in the public realm which will automatically ensure their wider acceptance and thus effectiveness in governance.

5. Consensus oriented:

There are several actors and as many viewpoints in a given society. Good governance requires mediation of the different interests in society to reach a broad consensus in society on what is in the best interest of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for sustainable human development and how to achieve the goals of such development.

6. Equity and inclusiveness:

A society's well-being depends on ensuring that all its members feel that they have a stake in it and do not feel excluded from the mainstream of society. This requires all groups, but particularly the most vulnerable, have opportunities to improve or maintain their well-being.

7. Effectiveness and efficiency:

Good governance means that processes and institutions produce results that meet the needs of society while making the best use of resources at their disposal. The concept of efficiency in the context of good governance also covers the sustainable use of natural resources and the protection of the environment.

8. Accountability:

Accountability is a key requirement of good governance. Not only governmental institutions but also the private sector and civil society organizations must be accountable to the public and to their institutional stakeholders. Accountability cannot be enforced without transparency and the rule of law.

Government, Governance and Good Governance:

The word 'Governance' lends itself to wider meaning which includes the processes as well as the results, making it more comprehensive in meaning and implications than the word 'government'. 'Government' refers to the machinery and institutional arrangements of the political community, whereas 'governance' means making policies for the development of organisations as well as people.

While 'governance', on the one hand, deals with collaborative partnership networks which are necessary for policy formulation and implementation, 'good governance', on the other hand, attempts to make this activity not just efficient but also more accountable, democratic and responsive to the public needs. 'Good governance' goes beyond the formal institutions of democratic government to address several other central issues which include — representative legislature; non-discriminatory laws; efficient, impartial and rapid judicial processes; transparent public agencies; Universal protection of human rights; accountability for decisions by public officials, devolution of resources and decision making to local.

Good Governance in India:

Kautilya's Arthashastra highlighted the principle of good governance as, —In the happiness of his people lies king's happiness, in their welfare his welfare, whatever pleases himself he shall not consider as good, but whatever pleases his people he shall consider as good. The Indian Constitution has not used the term even once in its preamble. Indeed, the Constitution has used 'governance' only once — in its directive principles of state policy.

Article 37 says: The provisions contained in this part shall not be enforceable by any court, but the principles therein laid down are nevertheless fundamental in the governance of the country and it shall be the duty of the state to apply these principles in making laws. "The directive principles of the state policy emphasize the content" part of good governance. E.g. Right to an adequate means of livelihood, Equal pay for equal work for both men and women is ensured, equitable distribution of resources etc. The problem of good governance (read administrative reform) is discussed in each five-year plan as well as by parliamentary committees. Besides, the Government of India has appointed no less than 34 committees devoted to good governance making a large number of recommendations. The plan documents in post 1990 reflected the essential principles of good governance including constitutionally protected right to elect government, accountable and transparent government, effective and efficient delivery of social and economic public services, a special attention for ensuring the effectiveness and efficiency of local governments, delivery of key services such as primary education and health, the rule of law, protection of the disadvantaged groups, especially the SCs, STs, minorities and others etc. One of the best policies that has set an example in the country is the Right to Information Act which came into full force in the midnight of 12th and 13th October 2005. Under the act any citizen can seek information from government or public authorities as notified in the act. The act seeks to deepen Indian democracy by empowering the citizens to obtain the needed information from the public authorities at the national, state and local levels and aims at good governance by ensuring the much-needed transparency and accountability in them. Another such initiative is The National Rural Employment Guarantee Act (NREGA), 2005, which has now been renamed as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). It is one such step towards implementing the provision of Right to Work and is the largest social welfare scheme of its kind in the world. Even

The Right to Education (RTE) Act, 2009, may be legitimately hailed as one of major landmark legislations that have been enacted by Parliament in the 21st century, with a view to achieve the objectives of Good Governance. It aims at fulfilling the promise of universal education by making it a mandatory obligation for the state to ensure that all children of the 6-14 years age group enroll themselves in schools and attend the classes.

In conclusion

After understanding the concept, meaning, principles and examples of good governance, one can infer that it is a broad and dynamic concept. Governance to become good governance needs participation of people at each stage through which ideals of the same can be achieved for a better welfare of people. The values of good governance need to be cherished and practiced in a true sense to make governance more efficient, effective and beneficial to the citizens.

Multiple choice questions on Chapter III Good Governance

1. The concept of Good Governance emerged in the year -----
A) 1989 B) 1995 C) 2000 D) 2005
2. To bring transparency efficiency and progressive in governance needs -----
process
A) Consonance B) Good Governance C) Centralization D) De-Centralization
3. Indian parliament Passed Right to Information Act. In -----
A) 2002 B) 2003 C) 2005 D) None of the above
4. For the a good Governance a government needs-----
A) Public Participation B) Centralization
C) Privatization D) None of The Above
5. Mahatma Gandhi National Rural Employment Guarantee (MGNREGA) Scheme was
stated in -----
A) 2001 B) 2003 C) 2005 D) None of The Above
6. Indian parliament Passed law regarding compulsory & free child education in -----
A) 2002 B) 2005 C) 2007 D) 2009
7. The process of E-Governance reveals -----
A) Good Governance B) Privatization
C) Centralization D) None of The Above
8. Governing by using science & technology is known as -----
A) E-Governance B) Private Administration
C) Scientific Administration D) None of The Above
9. MGNREGA Policy Guarantees-----
A) Education B) Employment C) Voting D) None of The Above
10. ----- Commission was formed for eradication of corruption
A) Central Vigilance Commission B) Election Commission
C) MGNREGA D) Finance Commission

Answer Key:-

- | | | | |
|-------|-------|-------|-------|
| 1- A, | 2- B, | 3- C, | 4- A, |
| 5- B, | 6- D, | 7- A, | 8- A, |
| 9- B, | 10- A | | |

Further Reading on Democracy, Elections and Good Governance:

1. Alam Javeed, 2004, Who Wants Democracy? Delhi, Orient Longman
2. Banerjee Mukulika, 2014, Why India votes? Delhi, Routledge
3. Godbole Madhav, 2014, Good Governance: Never on India's Radar, New Delhi, Rupa and Co.
4. Guha Ramchandra, 2017, India After Gandhi: The History of the World's Largest Democracy, New Delhi, Pan Macmillan India
5. Jaffrelot Christophe and Narender Kumar (ed.), 2018, Dr. Ambedkar and Democracy: An Anthology, New Delhi, Oxford University Press
6. Jayal Niraja, Amit Prakash, Pradeep Sharma, 2006, Local Governance in India: Decentralization and Beyond, New Delhi, Oxford University Press
7. Kohli Atul (ed.), 2001, The Success of India's Democracy, Cambridge, Cambridge University Press
8. Palshikar Suhas, 2017, Indian Democracy, Oxford India Short Introductions, New Delhi, Oxford University Press
9. Sawant P. B., 2013, A Grammar of Democracy, Mumbai, Bhashya Prakashan
10. Suri K. C. (ed.), 2013, Indian Democracy, ICSSR Research Survey and Explorations Volume II, New Delhi, Oxford University Press
11. Vora Rajendra and Suhas Palshikar (ed.), 2004, Indian Democracy: Meanings and Practices, New Delhi, Sage Publications
12. गोडबोले सुजाता (अनुवादित), २०१५, हरवलेले सुशासन, पुणे विश्वकर्मा पब्लिकेशन्स
13. लेले चित्रा (अनुवादित), २०१०, भारतीय लोकशाही : अर्थ आणि व्यवहार, पुणे, डायमंड पब्लिकेशन्स.
14. साठे शारदा (अनुवादित), २०१७, गांधीनंतरचा भारत : जगातील सर्वात मोठ्या लोकशाहीचा इतिहास, ठाणे, मॅजेस्टिक पब्लिशिंग हाऊस.
15. सोनवणे मनोहर (अनुवादित), २०१०, लोकशाही जिंदाबाद, पुणे, समकालीन प्रकाशन.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



**Name of the Faculty: For All Faculties
Environmental Studies
(Non-Credit)**

CHOICE BASED CREDIT SYSTEM

Syllabus: ENVIRONMENTAL STUDIES

(Syllabus to be implemented w.e.f. June 2020)

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

All UG for Fourth Semester Compulsory Paper

Environmental Studies

(CBCS - Syllabus) - 2020

- 1) **Title of the Paper:** Environmental Studies
- 2) **Pattern:** Semester and Credit system
- 3) **Total Contact Hours:** 45 hours

Structure for Environmental Studies

Class & Semester	Code	Name and type of the paper		L/P	Credits	Total Marks	UA	CA
		Type	Name					
For All UG Semester IV (Second year)								
All UG Second Year (4 th Semester)	EVS	Ability Enhancement Course (AECC) and Non Credit	Environmental Studies	50	NC	50	40	10
Compulsory: *Unit Test / Assignment/ Seminar/ Nature Visits / Field Work / Field Tour/ Industrial visits of 1-2 days and submission of report is compulsory under internals marks (CA)								

1. The credit earned by student with this course shall not be considered for calculation of SGPA/CGPA
2. This course is not considered as a passing head for counting passing heads for ATKT
3. Student must pass this subject for award of the degree

Evaluation Scheme:

Theory paper has 50 marks out of which 40 marks will be for Term End examination and 10 marks for College Internal Assessment. The candidate has to appear for internal evaluation of 10 marks and external evaluation (University Examination) of 40 marks.

A) College Internal Evaluation:

In case of theory paper, internal examination has to conduct by department / college.

Marks for internal assessment shall be given based on Unit Test / Assignment/ Seminar/ Nature Visits / Field Work / Field Tour/ Industrial visits of 1-2 days and submission of report is compulsory under internals marks (CA).

B) External Evaluation (End of Term University Examination):

I) Nature of Theory question paper:

- 1) Theory paper is of 40 marks.
- 2) Theory paper will be of 2 hours duration
- 3) There shall be 05 questions each carrying 08 marks.
- 4) Students have to attempt all the questions.

Syllabus As Per UGC Guidelines

UGC Letter – File No. 13-01/2000 (EA/ENV/COS-01 Dated 14th May, 2019)

Environment Studies (AECC)

Theory Lectures - (45)

Unit 1 : Introduction to environmental studies (2 lectures)

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development

Unit 2 : Ecosystems (6 lectures)

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :
 - a) Forest ecosystem
 - b) Grassland ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources (8 lectures)

- Land resources and land use change; Land degradation, soil erosion and desertification.
- **Deforestation:** Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- **Water:** Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- **Energy resources :** Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 4 : Biodiversity and Conservation (8 lectures)

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 5 : Environmental Pollution (8 lectures)

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Unit 6 : Environmental Policies & Practices (7 lectures)

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act, Air (Prevention, & Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 7 : Human Communities and the Environment (6 lectures)

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Unit 8 : Field work (Equal to 3 lectures)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, dam, pond, ocean / marine etc.

Suggested Readings:

1. Environmental Studies E - Text Book (Marathi and English Medium) Solapur University Solapur (2017).
2. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
3. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
4. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
5. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
6. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
7. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339: 36-37.
8. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
9. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.

10. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
11. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
12. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
13. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
14. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
15. Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
16. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
17. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
18. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
19. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
20. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
21. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

Nature of Question Paper for CBCS Semester Pattern

All UG and all Faculties

Paper: Environmental Studies (Compulsory)

Time: - 2 hrs.

Total Marks: - 40

Instructions:

1. All questions are compulsory
2. Draw Neat diagram and give equations wherever necessary
3. Figures to the right indicate full marks

Q. 1	Multiple choice questions (One Marks each)	08
1) a) b) c) d)	
2)		
3)		
4)		
5)		
6)		
7)		
8)		
Q. 2	Answer any FOUR of the followings.	08
	i)	
	ii)	
	iii)	
	iv)	
	v)	
	vi)	
Q. 3	Write short notes on any TWO of the following	08
	i)	
	ii)	
	iii)	
Q. 4	Answer any TWO of the following	08
	i)	
	ii)	
	iii)	
Q. 5	Answer any ONE of the following	08
	i)	
	ii)	

**Punyashlok Ahilyadevi Holkar Solapur University,
Solapur**



**Revised Syllabus For
B. A. Part-III Geography
Under the Faculty of Science and Technology**

CBCS PATTERN

Syllabus to be implemented from June 2021

(Subject to the modifications to be made from time to time)

**PUNYASHLOK AHILYADEVJI HOLKAR SOLAPUR UNIVERSITY,
SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part - III

Regional Planning and Development

Syllabus to be implemented from June 2021 onwards

1. **Title :** Regional Planning and Development
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** Regional Planning is the need of time to everyone. Geography subject can lead to the development of human activities through regional planning. In the process of development of geography, the changing nature of subject will make aware to the students about the recent technologies used in geography. This will further help to improve the use of geographical techniques and methods in teaching, learning and research work through regional planning.
4. **Objectives:**
 - To Familiarize the student with the types of region and types of Regional Planning and Delineation of planning region.
 - To Familiarize the student with the theory and models of regional planning
 - To get familiar with indicators of measurement of development.
5. **Course Outcomes:**

After the completion of course, the students will have ability to:

 - The students were known the importance of regional planning.
 - The students understood the concepts of region, regionalization, regional planning & development and detailed knowledge of region.
 - The students were familiar with indicators of measurement of development.
 - Detail understanding of Growth Pole Model, Center place Theory and Growth Foci Model in Indian context.
6. **Pattern of Exam:** Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Regional Planning and Development	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Resource Geography	VII	Regional Planning and Development	DSC 7 OR VII

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – V

- i. **DSC 7 OR Paper No. VII**
- ii. Title of Paper: **Regional Planning and Development**

Unit I: Region and Regional Planning 15

- 1.1. Definition of Region
- 1.2. Types of Region : (Formal and Functional)
- 1.3. Need of Regional Planning
- 1.4. Types of Regional Planning

Unit II. Delineation of Planning Region 15

- 2.1. Choice of Region for Planning
- 2.2. Characteristics of Ideal Planning Region
- 2.3. Delineation of Planning Region
- 2.4. Planning Regions of India

Unit III. Theories and Models for Regional Planning 15

- 3.1. Growth Pole Model of Perroux
- 3.2. Centre Place Theory of Walter Christaller
- 3.3. Growth foci concept of R.P. Misra

4.1. Indicators of Economic Development

4.2. Indicators of Social Development

4.3. Indicators of Environmental Development and Human Development.

References:

- Blij H.J. (Dec.1971):,Geography: Regional and Concept, Johan Wiley and Sons.
- Cloud P.I. (1998), An Introduction to Regional Geography, BlackWell Publication, Oxford and Massachusettes.
- Friedemann J.& Alonson W.(1964): Regional Development and Planning, MIT Press, Cambridge.
- Gore C.G. (1984): Regions in Question: Space Development Theory and Regional Policy, Methuen London.
- Gore C.G., Kohler G., Rich U.P. & Ziesemer T. (1996) : Quetioning Development, Essay on the Theory, Policies and Practice of Development Intervetion, Motropolis-Verlaje, Marburg.
- Peet R. (1999) :Theories of Development, Guilford Press, New York.
- Alden J. & Morgan (1974) :Regional Planning A Comprehensive view, Leonard Hill Books.
- Chand M. & Puri V. (1983): Regional Planning in India, Allied Publisher Ltd., New Delhi.
- Chandana R.C. (2000): Regional Planning & Development, Kalyani Publishers, Ludhiyana.
- Cook P. (1983): Theories of Planning & Spatial Development, Hutchinson & Com. Ltd. London.
- Glasson, John (1974): An Introduction to Regional Planning, Hutchinson Educational London.
- Misra R.P., Sundaram K.V. & Rao, etd.(1974): Regional Development Planning in India.
- Misra R.P (1992): Regional Planning, Concept Publishing Com. New Delhi.

**PUNYASHLOK AHILYADEVI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part - III

Urban Geography

Syllabus to be implemented from June 2021 onwards

1. **Title :** Urban Geography
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** The Board of studies should briefly mention foundation, core and applied Components of the course/ Paper. The student should get into the prime objectives and expected level of study with required outcome in terms of basic and advance knowledge at examination level.
4. **Objectives:**
 - To study the basic of urban Geography.
 - To study the type of urban Settlements, site and situations.
 - To get as ideas of relationship between human activities and urban development.
 - To make the students capable for handling the present problematic situation in urban development.
 - To make students as a good urban planner and environmental conservator.
5. **Course Outcomes:**

After the completion of course, the students will have ability to:

 - The students were known the importance of urban settlements through urban geography.
 - The students understood the types of urban Settlements, Site and situations.
 - The students were familiar with an idea of relationship between human activities and urban development.
 - Detail understanding of students regarding present urban problems and students are capable to handling of present problematic situations in urban areas.
 - The students are developed as a good urban planner and environmental conservator.
6. **Pattern of Exam:** Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Urban Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Urban Geography	VIII	Urban Geography	DSE 1A OR VIII

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – V

- i. **DSE 1A OR Paper No. VIII**
- ii. **Title of Paper: Urban Geography**

Unit I: Introduction to Urban Geography 15

- 1.1 Meaning and definition of Urban Geography
- 1.2 Nature and scope of Urban Geography
- 1.3. Approaches of Urban Geography
- 1.4. Significance of Urban Geography

Unit II. Patterns of Urbanisation 15

- 2.1 Meaning of urban settlement and Urbansiation
- 2.2 Concept and factors of urbanization
- 2.3 Patterns of Urbanisation in developed and developing countries

Unit III. Function, Structure and Morphology of Urban centers 15

- 3.1 Functional classification of town and cities
- 3.2 concept of structure and morphology
- 3.3 City Regions and C.B.D.
- 3.4 Models of towns Morphology; The Concentric Zone Theory, The Sector

Unit IV. Urban Issue and Case studies

15

4.1 Problems of housing and growth of slums

4.2 Problems of civic amenities (Water and Transport)

4.3 Problems of environmental pollution

4.4 Case studies of Solapur smart city and Pandharpur (with reference to Land use and Urban Issues)

References:

- Fyfe N. R. and Kenny J. T., 2005: The Urban Geography Reader, Routledge.
- Graham S. and Marvin S., 2001: Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition, Routledge.
- Hall T., 2006: Urban Geography, Taylor and Francis.
- Kaplan D. H., Wheeler J. O. and Holloway S. R., 2008: Urban Geography, John Wiley.
- Knox P. L. and McCarthy L., 2005: Urbanization: An Introduction to Urban Geography, Pearson Prentice Hall New York.
- Knox P. L. and Pinch S., 2006: Urban Social Geography: An Introduction, Prentice-Hall.
- Pacione M., 2009: Urban Geography: A Global Perspective, Taylor and Francis.
- Sassen S., 2001: The Global City: New York, London and Tokyo, Princeton University Press.
- Ramachandran R (1989): Urbanisation and Urban Systems of India, Oxford University Press, New Delhi
- Ramachandran, R., 1992: The Study of Urbanisation, Oxford University Press, Delhi
- Singh, R.B. (Eds.) (2001) Urban Sustainability in the Context of Global Change, Science Pub., Inc., Enfield (NH), USA and Oxford & IBH Pub., New Delhi.
- Singh, R.B. (Ed.) (2015) Urban development, challenges, risks and resilience in Asian meg

**PUNYASHLOK AHILYADEVJI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR
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B. A. Part - III

Agriculture Geography

Syllabus to be implemented from June 2021 onwards

8. Title : Agriculture Geography

9. Year of Implementation : Revised Syllabi will be implemented from June 2021 onwards.

10.Preamble: Agricultural Geography is the most and comparatively developed branch of Economic Geography. The presence syllabus of this paper includes along with the Nature and Scope the study of Agricultural determinants, Land use Theory and Agricultural systems, agricultural concepts like crop combination and productivity, impact of Green revolution and the modern technology used in agriculture. This study will be helps in making aware the students to the use of modern technologies which are used in agriculture.

11. Objectives:

- To help students to know the approaches to study agriculture geography.
- To study the methods of regionalization of agriculture.
- To provide in depth knowledge about agriculture geography.

12. Course Outcomes:

After the completion of course, the students will have ability to:

13. Pattern of Exam: Semester

14. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Agriculture Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Development of Geography	IX	Agriculture Geography	DSE 1B OR IX

**NEW/REVISED SYLLABUS FOR
B. A. Part-III Geography
(Introduced from June 2021 onwards)
Semester – V**

- i. DSE 1B Paper No. IX**
- ii. Title of Paper: Agriculture Geography**

Unit I: Introduction to agriculture Geography 15

- 1.1 Definition, Nature and Scope of Agriculture Geography
- 1.2 Importance of Agriculture
- 1.3 Modern Techniques in Agriculture

Unit II. Determination of Agriculture 15

- 2.1 Physical
- 2.2 Economical
- 2.3 Social
- 2.4 Cultural

Unit III. Agriculture Regions of India 15

- 3.1 Agro-Climatic regions
- 3.2 Agro-Ecological regions
- 3.3 Crop-Combination
- 3.4 Crop-Diversification

Unit IV. Agricultural Land use theory 15

- 4.1 Von Thunen Theory of Agricultural land use
- 4.2 Green and white revaluation of Agriculture in India
- 4.3 Agricultural problem and prospects in India - Physical and non-Physical

References:

1. Bayliss Smith, T.P.: The Ecology of Agricultural Systems. Cambridge University Press, London. 1987.
2. Gregor, H.P.: Geography of Agriculture. Prentice Hall, New York, 1970.
3. Grigg, D.B.: The Agricultural Systems of the World, Cambridge University Press, New York. 1974.
4. Fulle S.J.: Krushi Bhugol; Vidhyabharti Prakashan Latur, 2000.
5. Bhatt, M.S. (ed.) 2004: Poverty and Food Security in India Problems and Policies. Akkar Books, New Delhi.
6. Morgan W.B. & Muton R.C.(1971): Agricultural Geography, Mathuen, London.
7. Singh Jasbir & Dhillon S.S. (2004): Agricultural Geography, Tata Mc-Graw Hill Education, New Delhi.
8. Bhatia B.M. (1977): Socio-Economic Growth, Vikas New Delhi.
9. Hussain, M. (1999): Systematic Agricultural Geography, Rawat publications, Jaipur. (India)
10. Shafi M. (1983): Agricultural Productivity and Regional Imbalances a Study of Uttar Pradesh, Concept, New Delhi.
11. Symon, L. (1968): Agricultural geography, London.

**PUNYASHLOK AHILYADEVJI HOLKAR SOLAPUR UNIVERSITY,
SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part - III

Population Geography

Syllabus to be implemented from June 2021 onwards

1. **Title :** Population Geography
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** This curriculum focuses on the understanding of core and fundamental branches of the discipline. This paper is specially designed to learn the role of demography and population studies as a distinct field of human geography. It encompasses sound knowledge of key concept, different components of population. The curriculum has been carefully designed to include conceptual, basic themes, population dynamics and characteristic with contemporary issues.
4. **Objectives:**
 - To study the basics of population geography.
 - To study the population growth trends and its distribution.
 - To study the population dynamics and various theories of population.
 - To study the population compositions and its characteristics.
5. **Course Outcomes:**

After the completion of course, the students will have ability to:

 - This paper would bring an understanding of population geography along with relevance of demographic data.
 - The students would get an understanding of distribution and trends of population growth in the developed and less developed countries, along with population concepts.
 - The students would get an understanding of the dynamics of population.
 - An understanding of the implications of population composition in different regions of the world.

- An appreciation of the contemporary issues in the field of population studies

6. Pattern of Exam: Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Population Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Development of Geography	IX	Population Geography	DSE 2A OR IX

**NEW/REVISED SYLLABUS FOR
B. A. Part-III Geography
(Introduced from June 2021 onwards)
Semester – V**

- i. **DSE 2A OR Paper No. IX**
- ii. Title of Paper: **Population Geography**

Unit I: Introduction to Population Geography 15

- 1.1 Definition of population geography
- 1.2 Nature and Scope of population Geography
- 1.3 Significance of population Geography
- 1.4 Sources of population data (Census, Statistical abstract, NSS)

Unit II. Population Growth and Distribution 15

- 2.1 Growth of World population
- 2.2 Factors affecting the distribution of population
- 2.3 Population distribution of the world
- 2.4 Theories of population Growth: Malthus Theory and Demographic Transition Theory

Unit III. Population Dynamics

15

3.1 Concept of population Dynamics

3.2 Fertility: Causes, Effects and Measures

3.3 Mortality: Causes, Effects and Measures

3.4 Migration: Types, causes and effects Major international migration of the world after world War II

Unit IV. Population Composition and Characteristics

15

4.1 Age-Sex Composition Causes, Effects, Measures and Characteristics

4.2 Rural and Urban Composition Causes, Effects, Measures and Characteristics

4.3 Literacy: Effects and Characteristics

4.4 Contemporary Issues : HIV/ AIDS, Covid 19

References:

- Barrett H. R., 1995: Population Geography, Oliver and Boyd.
- Bhende A. and Kanitkar T., 2000: Principles of Population Studies, Himalaya Publishing House.
- Chandna R. C. and Sidhu M. S., 1980: An Introduction to Population Geography, Kalyani Publishers.
- Clarke J. I., 1965: Population Geography, Pergamon Press, Oxford.
- Jones, H. R., 2000: Population Geography, 3rd ed. Paul Chapman, London.
- Lutz W., Warren C. S. and Scherbov S., 2004: The End of the World Population Growth in the 21st Century, Earthscan
- Newbold K. B., 2009: Population Geography: Tools and Issues, Rowman and Littlefield Publishers.
- Pacione M., 1986: Population Geography: Progress and Prospect, Taylor and Francis.
- Wilson M. G. A., 1968: Population Geography, Nelson.
- Panda B P (1988): Janasankya Bhugol, M P Hindi Granth Academy, Bhopal
- Maurya S D (2009) Jansankya Bhugol, Sharda Putak Bhawan, Allahabad
- Chandna, R C (2006), Jansankhya Bhugol, Kalyani Publishers, Delhi
- Trewartha, G T (1969), A Geography of Population: world patterns, John Wiley, New York.
- MOOCS - NPTEL: <https://nptel.ac.in/>
- MOOCS - SWAYAM: <https://swayam.gov.in/>
- National Digital Library of India: <https://ndl.iitkgp.ac.in/>

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B. A. Part - III

Resource Geography

Syllabus to be implemented from June 2021 onwards

15. Title : Resource Geography

16. Year of Implementation : Revised Syllabi will be implemented from June 2021 onwards.

17. Preamble: Resource Geography is a major and developing branch of Economic Geography. The world countries are trying to make overall development with blindly utilizing different resources. The growing population exerts its pressure on present resources which generates various problems in front of countryside. The present syllabus of this paper includes Definition, Scope, concept, classification and significance of Resource Geography. It also includes major resources such as water, forest, energy and human resources with its distribution, utilization and problems. Newly evolved concept sustainable development is also studied with said resources.

18. Objectives:

- To understand the concept and classification of Resources.
- To examine the major resources (water, forest, energy and human) with their distribution, utilization and problems.
- To study the sustainable resource development.

19. Course Outcomes:

After the completion of course, the students will have ability to:

- The students were known the importance of Resources.
- The students were familiar with distribution, utilization and problems of resources like water, forest, energy and human.
- Detail understanding the sustainability of natural resource development.

20. Pattern of Exam: Semester

21. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Resource Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Development of Geography	IX	Resource Geography	DSE 2B OR IX

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – V

- i. **DSE 2B OR Paper No. IX**
- ii. Title of Paper: **Resource Geography**

Unit I: Introduction to Resource Geography **15**

- 1.1 Definition, Nature, and Scope of Resource Geography.
- 1.2 Concept and Classification of Natural Resource.
- 1.3 Importance of Resource Geography.

Unit II. Natural Resource **15**

- 2.1 Land Resource – Distribution, Utilization, Problems and Conservation.
- 2.2 Water Resources-Distribution, Utilization, Problems and Conservation.
- 2.3 Forest Resource-Distribution, Production, Problems and Conservation.

Unit III. Energy Resource **15**

- 3.1 Conventional Resource-Distribution, Utilization, Problems and Conservation.
- 3.2 Non-Conventional Resource-Distribution, Utilization, Problems and Conservation.

Unit IV. Sustainable Resource development **15**

- 4.1 Concept of sustainable Resource Development.
- 4.2 Sustainable Natural Resource Development- Land, Water, Forest, Energy.

References:

1. Cutter S. N., Renwich H. L. and Renwick W., 1991: Exploitation, Conservation, Preservation: A Geographical Perspective on Natural Resources Use, John Wiley and Sons, New York.
2. Gadgil M. and Guha R., 2005: The Use and Abuse of Nature: Incorporating This Fissured Land: An Ecological History of India and Ecology and Equity, Oxford University Press. USA.
3. Holechek J. L. C., Richard A., Fisher J. T. and Valdez R., 2003: Natural Resources: Ecology, Economics and Policy, Prentice Hall, New Jersey.
4. Jones G. and Hollier G., 1997: Resources, Society and Environmental Management, Paul Chapman, London.
5. Klee G., 1991: Conservation of Natural Resources, Prentice Hall, Englewood.
6. Mather A. S. and Chapman K., 1995: Environmental Resources, John Wiley and Sons, New York.
7. Mitchell B., 1997: Resource and Environmental Management, Longman Harlow, England.
8. Owen S. and Owen P. L., 1991: Environment, Resources and Conservation, Cambridge University Press, New York.

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B. A. Part - III

Evolution of Geographical Thought

Syllabus to be implemented from June 2021 onwards

1. **Title :** Evolution of Geographical Thought
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** This paper is basically designed to cater to foundation building of the students by imparting knowledge about the pillars of geography. It encompasses the evolution of the subject right from the experiences and understanding of travelers and explorers to the progression towards establishment of the discipline geography in sciences
4. **Objectives:**
 - To study the evolution of geographic thought.
 - To evaluating the contemporary trends in geographical studies.
 - To understands the debates in the geographical studies.
 - To study the recent trends in geography
5. **Course Outcomes:**
 - Students were able to visualize the basic theme, ideas and approaches of geographic knowledge with relation to historical juncture, varying schools and era of their emergence.
 - Detailed knowledge about the debates in the geographical studies.
 - Understanding of recent trends in Geography.
6. **Pattern of Exam** : Semester
7. **Scheme of Teaching & Examination**

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week	Examination scheme (Marks)
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		L	T	P	Total	Theory	Term work	Total
1	Evolution of Geographical Thought	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Geography of Economic Activities	X	Evolution of Geographical Thought	DSC 8 OR X

**NEW/REVISED SYLLABUS FOR
B. A. Part-III Geography
(Introduced from June 2021 onwards)
Semester – VI**

- i. DSC 8 OR Paper No. X**
- ii. Title of Paper: Evolution of Geographical Thought**

Unit I. History of Geographical Idea 15

- 1.1 Ancient period – contribution of Greek, Roman and Indian Geographers
- 1.2 Medieval period – Arab Geographers

Unit II. Schools of Geography 15

- 2.1 German School of Geography – Humboldt, Ritter & Razel
- 2.2 French School of Geography – Vidal -de-la- Blache
- 2.3 American School of Geography – Ellen Semple
- 2.4 British School of Geography – Mackinder

Unit III. Dichotomy in Geography 15

- 3.1 Environmental Determinism Vs Possibilism
- 3.2 Physical Vs Human Geography
- 3.3 Systematic Vs Regional Geography

Unit IV. Development of Geography after World War II 15

- 1.1 Quantitative revolution in Geography concept, objectives and merits
- 1.2 Impact of Quantitative revolution in Geography.

1.3 Perspectives in Geography: Behaviouralism, Humanism, Systems Approach, Radicalism

References:

1. Hartshorne Richard (1959) - Perspective on the nature of Geography Rand McNally& Co., New York
2. Dixit R.D. - Geography Thought: A contextual history of Idea
3. Dickinson R.E. - Makers of Modern Geography
4. Taylor Griffith - Geography of 20th Century
5. Sudipta Adhikari: History of Geographical Thought
6. Harvey David (1980) - Explanation in Geography Edward - Arnold Landon
7. Husain Majid (1984) - Evolution of Geographical Thought Rawat Publication, Jaipur
8. खतीब के . ए. व भांजे बी. एम- भूविज्ञान विकास, संजोग प्रकाशन, कोल्हापूर.

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B. A. Part - III

Geography of Health and Wellbeing

Syllabus to be implemented from June 2021 onwards

- 1. Title : Geography of Health and Wellbeing**
- 2. Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
- 3. Preamble:** Geography of Health and Wellbeing considers the significance for physical and mental health of interactions between people and their environment. This branch of Geography becomes popular due to its significance. In this course the fundamental concepts and knowledge of Geography of Health and wellbeing have been included. The present syllabus of this course includes perspectives of health, pressure on environmental quality and health, exposure and health risks, health and disease patterns.
- 4. Objectives:**
 - To study the awareness about the health and wellbeing.
 - To evaluating the contemporary trends in geographical studies.
 - To understands the debates in the geographical studies.
 - To understands the curiosity about disease and health.
- 5. Course Outcomes:**

After the completion of course, the students will have ability to:

 - Understand various geographical perspectives related to human health.
 - Create awareness of human health and environmental trends.
 - The students are familiar with geographical background of diseases and their regional pattern.
 - Detail understanding of pressure on environmental quality and human health.
 - The students are familiar with the process of health care planning in India.
 - The students are aware about impact of climate change on human health.
- 6. Pattern of Exam:** Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Geography of Health and Wellbeing	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Political Geography	XI	Geography of Health and Wellbeing	DSE 3A OR XI

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – VI

- i. DSE 3A OR Paper No. XI
- ii. Title of Paper: **Geography of Health and Wellbeing**

Unit I. Perspectives on Health:	15
1.1 Definition and scope	
1.2 Linkages with environment and development	
1.3 Health and Environmental trends: Population dynamics, urbanization, poverty and inequality	
Unit II. Pressure on Environmental Quality and Health	15
2.1 Human activities and its pressure on environment	
2.2 Land use and agricultural development	
2.3 Industrialization	
2.4 Transport	
Unit III. Exposure and Health Risks	15
3.1 Air pollution	
3.2 Water Pollution	
3.3 Household wastes	
3.4 Housing	

3.5 Workplace

Unit IV. Climate Change, Health and Disease Patterns

15

(In Environmental Context with special reference to India)

4.1 Communicable diseases and their regional pattern – AIDS

4.2 Lifestyle related diseases and their regional pattern – Cancer and Diabetes

4.3 Climate change and human health

4.4 Food production and nutrition

References:

- 1) Akhtar Rais (Ed.), 1990: Environment and Health Themes in Medical Geography, Ashish Publishing House, New Delhi.
- 2) Avon Joan L. and Jonathan A Patzed., 2001: Ecosystem Changes and Public Health, Baltimore, John Hopling Unit Press(ed).
- 3) Bradley, D., 1977: Water, Wastes and Health in Hot Climates, John Wiley Chichester.
- 4) Brown T., S. Mc Lafferty, and G. Moon. 2009. A companion to health and medical geography. Chichester, UK: Wiley-Blackwell. DOI:
- 5) Christaler George and Hristopoles Dionissios, 1998: SpatioTemporal Environment Health Modelling, Boston Kluwer Academic Press.
- 6) Cliff, A.D. and Peter, H., 1988: Atlas of Disease Distributions, Blackwell Publishers, Oxford.
- 7) Emch, M., Root, E.D., Carrel, M., 2017, Health and Medical Geography, Fourth Edition Guilford Publications
- 8) Gatrell, A., and Loytonen, 1998: GIS and Health, Taylor and Francis Ltd, London.
- 9) Gatrell A., and S. Elliott. 2009. Geographies of health. Chichester, UK: Wiley- Blackwell.
- 10) Gesler, W., and W. Kearns. 2002. Culture place and health. Critical Geographies. London: Routledge.
- 11) Hardham T. and Tannav M., (eds): Urban Health in Developing Countries; Progress, Projects, Earthgoan, London.
- 12) Moeller Dadewed., 1993: Environmental Health, Cambridge, Harvard University Press.
- 13) Shelar, S.K., 2012: Introduction to Medical Geography, Chandralok Pub., Kanpur.
- 14) Tromp, S., 1980: Biometeorology: The Impact of Weather and Climate on Humans and their Environment, Heydon and Son.

e-PG Pathshala: <https://epgp.inflibnet.ac.in/>

MOOCS - NPTEL: <https://nptel.ac.in/>

MOOCS - SWAYAM: <https://swayam.gov.in/>

National Digital Library of India: <https://ndl.iitkgp.ac.in/>

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B. A. Part - III

Political Geography

Syllabus to be implemented from June 2021 onwards

1. Title : Political Geography

2. Year of Implementation : Revised Syllabi will be implemented from June 2021 onwards.

3. Preamble: This paper is an academic discipline which is designed for student to convey knowledge about political activity of people and integral geographical space, which includes physical, economic, social, cultural, and political spaces. Also concerned with the study of both the spatially uneven outcomes of political processes and the ways in which political processes are themselves affected by spatial structures.

4. Objectives:

- To understand the basic concepts of political geography.
- To familiarize the students with the geographical factors which have a bearing on the geopolitical/ administrative organization of space.
- To enhance awareness of multidimensional nature of geo-political space.

5. Course Outcomes:

After the completion of course, the students will have ability to:

- Student will understand the history and development of political geography.
- Get knowledge about evaluation of state and nation.
- Get knowledge of Geo-political theories.
- Investigates problems and disputes of India with the most current research topics in political geography.

6. Pattern of Exam: Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Political Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Political Geography	IX	Political Geography	DSE 3B OR XI

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – VI

- i. **DSE 3B OR Paper No. XI**
- ii. Title of Paper: **Political Geography**

Unit I. Introduction of Political Geography	15
1.1 Definition of Political Geography	
1.2 Nature and Scope of Political Geography	
1.3 Historical Development of Political Geography	
1.4 Significance of Political Geography	
Unit II. Concepts in Political Geography	15
2.1 Concept of State, Nation, State- Nation, Frontiers and Boundaries	
2.2 Elements of State: Location, Shape, Size, Topography, Climate, Vegetation, Resources, Population and Communication.	
2.3 Concept of Geopolitics	
Unit III. Theories in Political Geography	15
3.1 The Heartland Theory of H. J. Mackinder	
3.2 Rim Land Theory of N. J. Spykman	
Unit IV. Resource Conflicts and Politics of Displacement	15
4.1 Krishna Water Conflict (Inter State)	
4.2 Ganga Water Conflict (International)	
4.3 Issues of Relief, Compensation and Rehabilitation: Sardar Sarovar	

4.4 Issues of Relief, Compensation and Rehabilitation: Ujani Projects

References:

1. Agnew J., 2002: *Making Political Geography*, Arnold.
2. Agnew J., Mitchell K. and Toal G., 2003: *A Companion to Political Geography*, Blackwell.
3. Cox K. R., Low M. and Robinson J., 2008: *The Sage Handbook of Political Geography*, Sage Publications.
4. Cox K., 2002: *Political Geography: Territory, State and Society*, Wiley-Blackwell
5. Gallaher C., et al, 2009: *Key Concepts in Political Geography*, Sage Publications.
6. Glassner M., 1993: *Political Geography*, Wiley.
7. Jones M., 2004: *An Introduction to Political Geography: Space, Place and Politics*, Routledg .
8. Mathur H M and M M Cernea (eds.) Development, Displacement and Resettlement – Focus on Asian Experience, Vikas, Delhi
9. Painter J. and Jeffrey A., 2009: *Political Geography*, Sage Publications.
10. Taylor P. and Flint C., 2000: *Political Geography*, Pearson Education.
11. Verma M K (2004): Development, Displacement and Resettlement, Rawat Publications, Delhi
12. Hodder Dick, Sarah J Llyod and Keith S McLachlan (1998), *Land Locked States of Africa and Asia* (vo.2), Frank Cass

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B. A. Part - III

Hydrology and Oceanography

Syllabus to be implemented from June 2021 onwards

1. **Title :** Hydrology and Oceanography
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** This paper is basically designed to cater to foundation building of the students by imparting knowledge about the hydrological cycle. It encompasses the availability of water on the globe and its uses on the earth surface.
4. **Objectives:**
 - To study the basic knowledge of hydrological cycle on the globe.
 - To study the importance of oceans and seas related to precipitation on the earth surface and its impact on agriculture.
 - To understand the riverine basin and its impact on human settlement
 - To study the marine organism and its necessity to over population in future
5. **Course Outcomes:**

After the completion of course, the students will have ability to:

 - Students were able to visualize the basic theme, ideas and approaches of geographic knowledge about hydrological cycle related to formation of precipitation, infiltration, ground water recharge.
 - Detailed knowledge sea organism life and mineral wealth and its application to food shortage problems in over populated region and industrial development in underdeveloped countries respectively in future.
 - Understanding of human interference on hydrological cycle and its impact on globally drought region, flooded area.
6. **Pattern of Exam:** Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Hydrology and Oceanography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Applied Geography	XII	Hydrology and Oceanography	DSE 4A OR XII

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – VI

- i. **DSE 4A OR Paper No. XII**
- ii. Title of Paper: **Hydrology and Oceanography**

Unit I. Hydrological Cycle 15

Systems approach in hydrology, human impact on the hydrological cycle; Precipitation, interception, evaporation, evapo-transpiration, infiltration, ground-water, run off and over land flow; Hydrological input and output. Water budget on globe.

Unit II. River Basin and Problems of Regional Hydrology 15

Characteristics of river drainage basins, basin surface run-off, measurement of river discharge; floods and droughts.

Unit III. Ocean Floor Topography and Oceanic Movements 15

Ocean Waves, Currents and Tides. Ocean Salinity and Temperature –Distribution and Determinants.

Unit IV. Coral Reefs and Marine Deposits and Ocean Resources 15

Types and Theories of Origin of Coral formation; Biotic and Mineral wealth in seas and oceans

References:

- Andrew. D. ward and Stanley, Trimble (2004): Environmental Hydrology, 2nd edition, Lewis Publishers, CRC Press.
- Karanth, K.R., 1988 : Ground Water: Exploration, Assessment and Development, Tata-McGraw Hill, New Delhi.
- Ramaswamy, C. (1985): Review of floods in India during the past 75 years: A Perspective. Indian National Science Academy, New Delhi.
- Rao, K.L., 1982 : India's Water Wealth 2nd edition, Orient Longman, Delhi,.
- Singh, Vijay P. (1995): Environmental Hydrology. Kluwar Academic Publications, The Netherlands.
- 6.Anikouchine W. A. and Sternberg R. W., 1973: The World Oceans: An Introduction to Oceanography, Prentice-Hall.
- 7.Garrison T., 1998: Oceanography, Wordsworth Company, Belmont.
- Kershaw S., 2000: Oceanography: An Earth Science Perspective, Stanley Thornes, UK.
- Pinet P. R., 2008: Invitation to Oceanography (Fifth Edition), Jones and Barlett Publishers, USA, UK and Canada.
- Sharma R. C. and Vatal M., 1980: Oceanography for Geographers, Chaitanya Publishing House, Allahabad.
- Sverdrup K. A. and Armbrust, E. V., 2008: An Introduction to the World Ocean, McGraw Hill, Boston.
- Singh, M., Singh, R.B. and Hassan, M.I. (Eds.) (2014) Landscape ecology and water management. Proceedings of IGU Rohtak Conference, Volume 2. Advances in Geographical and Environmental Studies, Springer
- Raghunath, H.M. (2006): Hydrology: Principles, analysis and Design (2nd Ed.), New age International, New Delhi.
- Cech, T.V. (2009): Principles of Water Resources: History, Development, Management, and Policy (3rd Ed.), Wiley, Hoboken, New Jersey.
- Trujillo, A.P., and Thurman, H.V. (2010): Essentials to Oceanography (10th Ed.), Prentice Hall, New Jersey.

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B. A. Part - III

Social Geography

Syllabus to be implemented from June 2021 onwards

1. **Title :** Social Geography
2. **Year of Implementation :** Revised Syllabi will be implemented from June 2021 onwards.
3. **Preamble:** This curriculum focuses on the understanding of social geography of the discipline. This paper is specially designed to cater to social study of the students by imparting knowledge about the society. Social geography is the branch of human geography that is most closely related to social problems and well being, dealing with the relation of social phenomena and its spatial components. The different conceptions of social geography have been overlapping with other sub-fields of geography.
4. **Objectives:**
 - Understanding the concept, nature and scope of social geography.
 - To study the technological, occupational and migration changes of peoples in India.
 - An analysis of different social categories and their spatial distribution.
 - To understand the geographies of social welfare, well being and social problem.
5. **Course Outcomes:**

After the completion of course, the students will have ability to:

 - In depth understanding the problems and prospects of society in India.
 - The students are fully aware about the technological, occupational and migration changes of peoples in India.
 - Detailed knowledge about the social categories and their spatial distribution.
 - Understanding concepts of social wellbeing, welfare and social problem in India.
6. **Pattern of Exam:** Semester

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Theory	Term work	Total
1	Social Geography	04	04	--	04	40	10	50

8. Equivalence in accordance with titles and contents of papers (For revised papers)

Sr. No.	Title of Old Paper	Old paper No.	Title of New paper	New Paper No.
1.	Applied Geography	XII	Social Geography	DSE 4B OR XII

NEW/REVISED SYLLABUS FOR B. A. Part-III Geography (Introduced from June 2021 onwards) Semester – VI

- i. **DSE 3A OR Paper No. XII**
- ii. Title of Paper: **Social Geography**

Unit I: Introduction of Social Geography **15**

- 1.1 Definition of Social Geography
- 1.2 Nature and Scope of Social Geography
- 1.3 Branches of Social Geography
- 1.4 Approaches and Importance of Social Geography

Unit II. Peopling Process of India **15**

- 2.1 Concept of peopling process
- 2.2 Technological Changes
- 2.3 Occupational Changes
- 2.4 Migration

Unit III. Social Categories and their spatial distribution of World **15**

- 3.1 Tribe
- 3.2 Race
- 3.3 Religion
- 3.4 Gender

4.1 Concept of Social Welfare and Wellbeing

4.2 Components of Social Welfare and Wellbeing – Healthcare, Housing and Education

4.3 Social Problems- Slums, Communal Conflicts and Crime

References:

1. Ahmed A., 1999: Social Geography, Rawat Publications.
2. Casino V. J. D., Jr., 2009) Social Geography: A Critical Introduction, Wiley Blackwell.
3. Cater J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
4. Holt L., 2011: Geographies of Children, Youth and Families: An International Perspective, Taylor & Francis.
5. Panelli R., 2004: Social Geographies: From Difference to Action, Sage.
6. Rachel P., Burke M., Fuller D., Gough J., Macfarlane R. and Mowl G., 2001: Introducing Social Geographies, Oxford University Press.
7. Smith D. M., 1977: Human geography: A Welfare Approach, Edward Arnold, London.
8. Smith D. M., 1994: Geography and Social Justice, Blackwell, Oxford.
9. Smith S. J., Pain R., Marston S. A., Jones J. P., 2009: The SAGE Handbook of Social Geographies, Sage Publications.
10. Sopher, David (1980): An Exploration of India, Cornell University Press, Ithasa
11. Valentine G., 2001: Social Geographies: Space and Society, Prentice Hall.
12. सामाजिक व सांस्कृतिक भूगोल - विठ्ठल धारपुरे, पिंपळापुरे बुक डीस्ट्रीबुटर

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B. A. Part – III Geography

(Practical Paper -I)

1.	Title	:	Map Work & Map Interpretation
2.	Year of Implementation	:	Revised Syllabi will be implemented from June 2021 onwards.
3.	Preamble	:	Practical Work is the most important part of Geography. Map is an indispensable tool in Geographical Studies & Research activities. The present syllabus of this paper includes study of maps and their types, Map Projections, S.O.I. Topomaps, I.M.D. Weather Maps, and Cartographic Techniques.
4.	Objectives	:	2. To introduce the students with the importance of map making and map Interpretation. 3. To make the students to understand map, concept of scale and concept of projection. 4. To provide training in analysis of landforms. 5. To give basic information to the students about S.O.I. maps and I.M.D. weather Reports. 6. To develop the skill of map Interpretation among the students.
5.	Course Outcomes	:	1. In depth understanding the map, concept of scale and projection. 2. Detailed knowledge about the analysis of landforms and its identification. 3. The students are deeply aware about basic information to the students about S.O.I. toposheets and I.M.D. weather reports and obtained the skills about map interpretation.
6.	Pattern of Exam	:	Annual
7.	Scheme of Teaching & Examination		

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Practical	Term work	Total (Annual)
1	Map Making and Map Interpretation	--	--	10	10	100	--	100

Revised Syllabus for B. A. – III
(Introduced from June 2021 Onwards)

Revised Syllabus for
B. A. (Part III) Geography
Practical Paper -I

Title of Paper - Map Making and Map Interpretation (100 Marks)

Unit – 1 : Introduction to Map and Map Scales Periods 50 Marks (15)

1.1 Map

1.1.1 Map – Definition, Elements

1.1.2 Classification of Maps: Based on Scale and Purpose

1.2 Map Scale

1.2.1 Meaning and Definition of Map Scale

1.2.2 Methods of Representation of scale - Verbal, Numerical and Graphical.

1.2.3 Scale Conversion

1.2.4 Construction of Graphical Scale – i) Simple (Plane Scale) ii) Time and Distance Scale iii) Diagonal Scale

Unit – 2. Map Projection

Periods 50 Marks (15)

2.1. Definition, Classification of Projections:

- Based on Method of Construction: perspective and non-perspective
- Based on Developable Surface used: Conical, Cylindrical, Zenithal, Conventional.
- Based on Position of Tangent Surfaces: Polar, Equatorial (normal), Oblique.
- Based on Position of view point or light: Gnomonic, Stereographic, Orthographic

2.2. Graphical Construction of the following Projections with Properties and Use:

- Zenithal Polar Gnomonic Projection

- Zenithal Polar Equal Area Projection
- Simple Conical Projection with one standard Parallel
- Simple Conical Projection with two standard Parallel
- Cylindrical equal area projection
- Mercator's Projection and Reference to Universal Transverse Mercator (UTM) Projection

Unit – 3 : Profile Analysis

Period 50 Marks (15)

3.1 Slope and Gradient

3.1.1 Types of Slope: Gentle, Steep, Even, Uneven, Convex, Concave, Terraced.

3.1.2 Methods of Relief Representation

Qualitative: - Hachures, Hill shading, Layer Tint

Quantitative: - Contours, Form lines, Spot Heights, Bench Marks, Triangulation Mark

3.1.2 Expression of Slopes: a) Gradient b) Degree c) Per Cent d) Mills

3.1.3 Representation of Relief by Contours: Hill, Mountain, Ridge, Cliff, Saddle, Plateau, Knoll, Spur, Col or Pass, Gorge, 'V' Shaped Valley, Waterfall, 'U' Shaped Valley, Cirque, Ria Coast, Fiord Coast, Sea cliff.

3.2 Profiles- Simple profile, Longitudinal profile

Unit – 4 : Topographical Maps

Periods 50 Marks (15)

4.1 Development of Survey of India

4.2 Indexing of S.O.I. Topographical Maps

4.3 Signs, Symbols and Colors used in SOI Toposheet

4.4 Interpretation of S.O.I.'s Topographical Map (Mountain, Plateau and Plain) a) Marginal Information b) Physical environment: Relief, Drainage and Vegetation c) Cultural environment: Settlements, Transportation and Communication, Irrigation. d) Land Use

Unit 5: Weather Instruments and IMD Maps Periods 50 Marks (15)

5.1 Study of weather Instruments with reference to Principle, Mechanism, and Function
 a) Thermograph b) Barograph c) Dry and Wet Bulb Thermometer d) Wind vane e) Cup Anemometer f) Rain Gauge.

- Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
- Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.
- Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata. 2010.
- Sarkar, Ashis : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.
- Singh, Gopal : Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi, 1996.
- Singh, R and Kanaujia, L.R.S.: Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh, R. L. and Rana P.B. : Elements of Practical Geography, Kalyani Publishers, New Delhi – Ludhiana, 1998.
- Aher A. B., Chodhari A. P. & Bharambe S. N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
- Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
- P. Saha and P. Basu (2006): Advanced Practical Geography, Books and Allied Publication, Kolkata, India.
- Khullar, Essentials of Practical Geography, New Academic Publishing Co, India.
- Singh L R (2011): Fundamentals of Practical Geography
- Robinson Rep. (2010): Elements of Cartography

**PUNYASHLOK AHILYADEVJI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part – III Geography

(Practical Paper -II)

- 1. Title** : **Advanced Tools, Techniques & Field Work**
- 2. Year of Implementation** : Revised Syllabi will be implemented from June 2021 onwards.
- 3. Preamble** : Modern science & technology have gained momentum. In the process of development of science and technology, the changing nature of subject of Geography will make aware to the students about the advanced techniques such as Remote Sensing, GIS and GPS. The application of computers has revolutionized the use of methods & techniques. The present syllabus of this paper includes study of Aerial Photographs, Remote Sensing, GIS, Application of Computer and use of field work in Geography. This will further help to improve the use of advanced techniques and methods in teaching-learning and research work.
- 4. Objectives** :
 - 1) To introduce the students with the importance of field work and advanced Techniques in Geography.
 - 2) To provide training in application of modern tool and techniques in Geography.
 - 3) To enable the students to understand the use of computer for analysis of Geographical data.
 - 4) To enhance the skill of the students in instrumental survey.
 - 5) To give basic information to the students about Aerial Photographs, Remote Sensing, GIS and GPS.
- 5. Course Outcomes** :
 1. In depth understanding the importance of field work and advanced Techniques in Geography.
 2. The students are trained to implement modern tool and techniques in Geography.
 3. The students are deeply aware about the basics and trained in instrumental survey.
 4. The students are deeply familiar with computer, GIS, GPS and Remote Sensing.
- 6. Pattern of Exam** : Annual

7. Scheme of Teaching & Examination

Sr. No.	Subjects/Papers	Teaching Scheme Hrs./Week				Examination scheme (Marks)		
		L	T	P	Total	Practical	Term work	Total (Annual)
1	Advanced Tools, Techniques & Field Work	--	--	10	10	100	--	100

Revised Syllabus for B. A. – III
(Introduced from June 2021 Onwards)

Revised Syllabus for
B. A. (Part III) Geography
Practical Paper -II

Title of Paper - Advanced Tools, Techniques (Computer, Remote Sensing, GIS, GPS) & Field Work (100 Marks)

Unit: 1 Introduction to Computer

Lectures-50 Marks-10

1.1: **Computer Fundamentals:** Definition, Characteristics, Hardware & Software.

1.2: **Application of computer in geography**

1.2.1: Construction of Line Graphs, Bar Graphs

1.2.2: Construction of Pie Diagram and Scatter Diagram.

1.3: **Significance and application of Internet in Geographical Studies.**

Unit: 2 Remote Sensing

Lectures- 50 Marks-15

2.1 Definition, Components and Development of Remote Sensing.

2.2 Principles of Remote Sensing: EMR, Sensors and Platforms.

2.3 Application of Remote Sensing in Geography.

2.4 Aerial photographs and Satellite imagery: Definition, types

2.5 Identification of Physical and cultural features from Aerial Photographs or Satellite Imagery.

Unit: 3 GIS and GNSS (GPS)

Lectures- 50 Marks 15

3.1 Geographical Information System (GIS)

- 3.1.1 Definition and components
- 3.1.2 GIS Data Structure: Types (spatial and non-spatial), Raster and Vector data
- 3.1.3 Georeferencing, Digitization, Map Layout Preparation
- 3.1.4 Application of GIS in Geography: Land use or Land Cover, Urban Sprawl
Analysis, Forests Monitoring

3.2 Global Navigation Satellite System (Global Positioning System)

- 3.2.1 Definition and components
- 3.2.2 Application of GPS in Geography
- 3.2.3 Field work through GPS: Determining latitude, longitude and altitude
- 3.2.4 Exercise with Google earth Program.

Unit :4 Statistical methods and techniques

Lectures- 60 Marks-15

4.1: Geographical Data:

- 4.1.1. Spatial and Temporal
- 4.1.2. Individual, Discrete and Continuous Data

4.2 Analysis of statistical data by the following methods and techniques

- 4.2.1 Measures of Central Tendency: Mean, Median and Mode
- 4.2.2 Dispersion: Mean deviation, Standard deviation and Quartile Deviation.
- 4.2.3 Correlation: Karl Pearson's Method
- 4.2.4 Analysis of Time Series: Semi-average Method and Moving average method

Unit :5 Surveying

Lectures- 60 Marks-15

5.1 Introduction to Survey: Meaning and types

5.2 Preparation of plans of the given area with the following survey method (**Any one methods among them**)

- A) Dumpy Level survey
- B) Plane Table survey (Radial, Intersection, and open and closed Traverse method)
- C) Abony Level Survey.

5.3 Preparation of plans Prismatic compass survey (Radical, Intersection and open and closed Traverse method)

5.3.1 Correction of bearing.

5.4 Preparation of Chain and Tape survey (Triangulation and open and closed Traverse method)

5.4.1. Cross staff surveying

Unit:6 Project work based on field work any one of below **Marks-10**

6.1 Research Methodology

6.2 Resource, Population, Agricultural, Settlement, Environmental, Industrial, Health issues, any other issues related to local area.

(Project Report must be content of following points: Introduction – Aims – Objectives - Review of the literature - Data collection – Methodology - Data Analysis – Interpretation - Findings – Suggestions – Bibliography)

Unit:7 Study Tour **Marks-10**

Maximum 15 days at Geographical Interest in India and preparation of tour report.

Unit:8 Journal and Viva Voce **Marks 10**

Note : 1. Use of stencils, log tables, computer and calculator is allowed.

2. Journal should be completed and duly certified by practical in-charge and Head of the Department.

3. Examiners should set jointly the question paper for each batch.

4. Each batch should not more than 12 students

5. Each department should have at least 2 computers, 1 printer, 1 scanner, 10 pairs of Aerial Photographs, 5 Pocket Stereoscopes, 2 Mirror Stereoscopes and 5 Remote Sensing Images.

Reference:

- Bygoot, J: An Introduction to Mapwork and Practical Geography, University Tutorial, London 1964.
- Khan MD. Zulfequar Ahmad : Text Book of Practical Geography, Concept Publishing Company, New Delhi, 1998

- Mishra, R.P. and Ramesh A. : Fundamentals of Cartography, Concept Publishing Company, New Delhi, 2000
- Monkhouse F.J. and Wilkison, H.R.: Maps and Diagrams, Mathuen. London, 1971.
- Negi., Dr. Balbir Singh : Practical Geography, Kedar Nath Ram Nath, Meerut, Delhi.
- Raisz, E.: Principals of Cartography, McGraw Hill Book Com., Inc, New York, 1962.
- Robinson, A.H. and Sale, S.D.: Elements of Cartography, John Witey and Sons, Inc, New York, 1969.
- Saha, Pijushkanti and Basu Partha : Advanced Practical Geography – A Laboratory Manual Books and Allied (P) Ltd, Kolkata. 2010.
- Sarkar, Ashis : Practical Geography: A systematic Approach, Orient Longman limited, Calcutta, 1997.
- Singh, Gopal : Map work and Practical Geography Vikas Publishing House Pvt. Ltd. New Delhi, 1996.
- Singh, R and Kanaujia, L.R.S.: Map Work and Practical Geography, Central Book Depot, Allahabad.
- Singh, R. L. and Rana P.B. : Elements of Practical Geography, Kalyani Publishers, New Delhi – Ludhiana, 1998.
- Aher A. B., Chodhari A. P. & Bharambe S. N. Techniques of Spatial Analysis Prashant Publication Jalgaon 2015
- Maurice Yeats, An Introduction to Quantitative Analysis in Human Geography, McGraw Hill, New York, 1974.
- P. Saha and P. Basu (2006): Advanced Practical Geography, Books and Allied Publication, Kolkata, India.
- Khullar, Essentials of Practical Geography, New Academic Publishing Co, India.
- Singh L R (2011): Fundamentals of Practical Geography
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**PUNYASHLOK AHILYADEVJI HOLKAR SOLAPUR UNIVERSITY,
SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part - III

SEC 01

A CERTIFICATE COURSE IN LAND SURVEY

Objectives – The course aims to achieve the following objectives:

- To introduce the students a new technology of Land Surveying.
- To acquaint the students with reading obtained with Total Station/GPS forming a database for surveying and mapping.
- To offer practical training in land surveying to the students and make them surveying experts.
- To generate job opportunities in the corporate and government sector.

Paper I Theory

Unit No.	Topic	Subtopic	No. of Periods
9.	Introduction to Surveying	Meaning and definition of surveying, History of survey, Types of surveying, Concept of Surveying, Uses of surveying	05
10.	Scale and Contours	Definition and meaning, Characteristics and properties, Methods of contour, Definition and Methods of expression of Scale, Measurement units	05
11.	Introduction to S.O.I. Toposheets	Indexing, Conventional Signs, Symbols Interpretation of SOI topographical map	05
12.	Surveying	Introduction to chain and tape, plane table and prismatic compass survey Survey instruments and its use, merits and demerits	05
13.	Dumpy level Survey	Definition and Principles, Instruments and its use, Merits and demerits	05
14.	Theodolite Survey	Definition and Principles, Horizontal & Vertical angles, Instrument and its use, Merits and demerits	05

15.	Computer Cartography	Principles of Computer Cartography, Hardware and Software, Application of Computer Cartography, Advantages and Limitation	10
16.	Total Station Surveying	Basic Terms used in Total Station Surveying, Total Station instrument components, Phases of Total Stations Survey, Sources of error for total stations, Electronic Notebook, Advantage and disadvantage	10

REFERENCES

- iii. Rangwala S.C. 2011. Surveying and Leveling, Charotar Publishing House Pvt. Ltd. Anand,(GJ)
- iv. Mishra, R.P. (1973): Elements of Cartography. Prasaranga, University of Mysore.
- v. S. K. Roy (2004) Fundamentals Of Surveying, PHI Learning Pvt. Ltd.
- vi. Robinson, A.H & Sale R.D.: Elements of Cartography. Johns House & Sons, London.
- vii. Sing R. L. (1996) : Map Work & Practical Geography, Central Book Dept. Allahabad.
- viii. Ahmed, E-I. Rabbany 2006) :Introduction to GPS: The Global Positioning System, Artech House, Boston
- ix. Nel, S . (2008):Global Positioning, John Wiley and Sons, Hoboken

Paper II

Paper – II (Practical)

Field Work and Laboratory Work

Total Periods: 80

Unit No	Topic	Subtopic	No. of Periods
ii.	Scale and Area Measurement	8. Conversion of units 9. Conversion and Construction of scale 10. Exercises on area measurement. 11. Interpolation of contour lines	15
v.	Modern Land Surveying Techniques	<ul style="list-style-type: none">Total Station- Vertical and horizontal angle measurement, topographical survey (plain table and contour survey), Stake out / Demarcation/ Survey of Building Layouts / Plot Layouts / Roads / Alignments, Establish Benchmarks, Measurement of remote distance and elevation using special function of TS, Solution of trigonometric problems using COGO function on the field / Site, Calculate 2D, 3D area on the field / Site, Calculation of surface volume on the field / Site, Survey work estimation factors, procedure for download and upload data to TS, TS data formats, Preparation simple survey map using Software.	25
v.	Field trip	Organization of field trip for Total Station	05
vi.	Project work	(Application of Total Station in specific domain area) Total Station data acquisition, Processing and Presentation Project Report : Final Reporting	20
ii.	Viva – voce	Based on Project Work	05

REFERENCE

- Satheesh Gopi, (2007), Advanced Surveying: Total Station, GIS and Remote Sensing Pearson Education India,
- Charles D. Ghilani, Paul Richard Wolf (2008): Elementary Surveying: An Introduction to Geomatics, Prentice Hall,
- N. N. Basak (1994): Surveying and Leveling, Tata McGraw Hill Publishing Company LTD., New Delhi.

- Parkinson, B. Spilker J. : (Eds.) (1996) GPS : Theory and Applications Vol. I & II, AIAA, Washington.

**PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY,
SOLAPUR**

Bachelor of Arts (B. A.)

B. A. Part - III

SEC 02

A CERTIFICATE COURSE TRAVEL AND TOURISM

Objectives:

- iii. To introduce the fundamental concept of Travel and Tourism.
- iv. To familiarize with the significance and emerging trends in tourism.

Unit No	Topic	Subtopic	No. of Periods
1	Introduction to Travel	Meaning & definitions of tourism, traveler, excursionist, tourists - Objectives, nature & Classification of tourism & tourists. Tourism recreation & leisure inter-relationship. Growth and development of Tourism through the ages.	10
2	History and growth of travel agency businesses	Emergence of Thomas Cook – Emergence of Travel Intermediaries- Definition - The travel Market: Business Travel - Corporate Travel - Commercial Group Travel - Institutional Travel - Leisure Travel - Family Travel - Single Resort Travel - Special Interest Travel. Types of travel agency and tour operations - Inter-relationship between Travel agency and tour operation. Indian travel agents and tour operators - an overview.	10
3	Components and Forms of Tourism	Components of tourism Forms of Tourism: religious, Medical Tourism, historical, social, adventure, health, business, conferences, conventions, incentives, sports and adventure tourism	10
4	Major tourist attractions in India	physical and political features of Indian subcontinents. Climatic conditions prevailing in India. Tourism attractions in different states and territories of India.	10
5	Tourism Marketing	Marketing for Hospitality and Tourism – Definition – Core Marketing Concepts – Marketing Philosophies – Selling Vs	10

		Marketing, Differences between Products and Services – Technology and Marketing – Specific features of Tourism Marketing.	
		FIELD WORK CASE STUDIES Panning and Organization of tour on famous routs for 2 to 15 days.	60

References:

8. Dennis L & Foseter – Glencoe (2003), an Introduction to Travel & Tourism, McGrawHill
9. Ghosh Bishwanth (2000), Tourism & Travel Management, Second Revised Edition Vikas Publishing House Pvt Ltd, New Delhi.
- 10.Kaul R.N 91991), Dynamics of Tourism, Sterling Publishers Pvt Ltd, Volume 1,2 & 3 New Delhi,
- 11.Pran Nath Seth(1997),Successful Tourism Management, Sterling Publishers Pvt Ltd, New Delhi,
- 12.Praveen Sethi(1999), Tourism for the Next Millennium, Rajat Publication New Delhi.
- 13.Singh Anand (2005), Tourism in Ancient India, Serials Publications, New Delhi.
- 14.Sinha R.K (2003), Growth and Development of Modern Tourism, Dominant Publishers, New Delhi.

**PUNYASHLOK AHILYADEVII HOLKAR SOLAPUR
UNIVERSITY, SOLAPUR**



Name of the Faculty: Science & Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: ZOOLOGY

Name of the Course: B.Sc. II (Sem–III& IV)

(Draft Syllabus to be implemented from w.e.f. June 2020)

P.A.H.Solapur University, Solapur , Faculty of Science
Choice Based Credit System (CBCS)
B.Sc.-II Zoology
(2020-2021 : W.e.f. June 2020)

Background of Curriculum:

In accordance with the UGCs reference to standardize curricula at the national level and bring a match across all the Indian Universities, an attempt has been made to follow the pattern given in the UGCs Undergraduate Template.

Zoology deals with the study of animal kingdom specially the structural diversity, biology, embryology, evolution, habits and distribution of animals, both living and extinct. As it covers a fascinating range of topics, the modern zoologists need to have insight into many disciplines. The learning outcomes-based curriculum framework for a B.Sc. degree in Zoology is designed to cater to the needs of students in view of the evolving nature of animal science as a subject. The framework is expected to assist in the maintenance of the standard of Zoology degrees/programmes across the country by reviewing and revising a broad framework of agreed expected graduate attributes, qualification descriptors, programme learning outcomes and course-level learning outcomes. The framework, however, does not seek to bring about uniformity in syllabi for a programme of study in Zoology, or in teaching learning process and learning assessment procedures. Instead, the framework is intended to allow for flexibility and innovation in programme design and syllabi development, teaching learning process, assessment of student learning levels. A comprehensive knowledge of structure-function relationship at the level of gene, genome, cell, tissue, organ, and systems, through development would further add to the knowledge base and the learning outcome in terms of editing of genes and genomes for industrial application and research purposes.

Learning Outcomes based approach to Curriculum Planning:

The courses should be delivered in terms of concepts, mechanisms, biological designs & functions and evolutionary significance cutting across organisms at B.Sc. level. These courses should be studied by students of all branches of biology. Both chalk and board, and PowerPoint presentations can be used for teaching the course. The students should do the dissertation/project work under practical of different courses, wherever possible.

The students are expected to learn the courses with excitements of biology along with the universal molecular mechanisms of biological designs and their functions. They should be able to appreciate shifting their orientation of learning from a descriptive explanation of biology to a unique style of learning through graphic designs and quantitative parameters to realize how contributions from research and innovation have made the subjects modern, interdisciplinary and applied and laid the foundations of Zoology, Animal Sciences, Life Sciences, Molecular Biology and Biotechnology. These courses and their practical exercises will help the students to apply their knowledge in future course of their career development in higher education and research. In addition, they may get interested to look for engagements in industry and commercial activities employing Life Sciences, Molecular Biology and Biotechnology. They may also be interested in entrepreneurship and start some small business based on their interest and experience.

Graduate Attributes in Zoology:

- **Disciplinary knowledge and skills:** Capable of demonstrating (i) comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in Zoology and its different subfields (ii) ability to use modern instrumentation for advanced genomic and proteomic technology.
- **Skilled communicator:** Ability to impart complex technical knowledge relating to Zoology in a clear and concise manner in writing and oral skills.
- **Critical thinker and problem solver:** Ability to have critical thinking and efficient problem solving skills in the basic areas of Zoology
- **Sense of inquiry:** Capability for asking relevant/appropriate questions relating to issues and problems in the field of Zoology, and planning, executing and reporting the results of an experiment or investigation.
- **Team player/worker:** Capable of working effectively in diverse teams in both classroom, laboratory and in industry and field-based situations.
- **Skilled project manager:** Capable of identifying/mobilizing appropriate resources required for a project, and manage a project to completion, while observing responsible and ethical scientific conduct; and safety and chemical hygiene regulations and practices.
- **Digitally literate:** Capable of using computers for Bioinformatics and computation and appropriate software for analysis of genomics and proteomics data, and employing modern bioinformatics search tools to locate, retrieve, and evaluate location and biological annotation genes of different species.
- **Ethical awareness/reasoning:** Capable of conducting their work with honesty and precision thus avoiding unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, and appreciating environmental and sustainability issues. Research ethics committee expects them to declare any type of conflict of interest that may affect the research. Any plan to withhold information from researchers should be properly explained with justification in the application for ethical approval.
- **Lifelong learners:** Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling

Choice Based Credit System: With the view to ensure worldwide recognition, acceptability, horizontal as well as vertical mobility for students completing undergraduate degree, Solapur University has implemented Choice Based Credit System (CBCS) at Undergraduate level. The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective/minor or skill based courses. The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Therefore, it is necessary to introduce uniform grading system in the entire higher education in India. This will benefit the students to move across institutions within India to begin with and across countries. The uniform grading system will also enable potential employers in assessing the performance of the candidates. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations.

- Outline of Choice Based Credit System:

1. *Core Course*: A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course.

2. *Elective Course*: Generally a course which can be chosen from a pool of courses and which may be very specific or specialized or advanced or supportive to the discipline/ subject of study or which provides an extended scope or which enables an exposure to some other discipline/subject/domain or nurtures the candidate's proficiency/skill is called an Elective Course.

Discipline Specific Elective (DSE) Course: Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective.

3. *Ability Enhancement Courses (AEC)*: The Ability Enhancement (AE) Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to Knowledge enhancement; (i) Environmental Science and (ii) English/MIL Communication. These are mandatory for all disciplines. SEC courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

- **Credit**: Credit is a numerical value that indicates students work load (Lectures, Lab work, Seminar, Tutorials, Field work etc.) to complete a course unit. In most of the universities 15 contact hours constitute one credit. The contact hours are transformed into credits. Moreover, the grading system of evaluation is introduced for B.Sc. course wherein process of Continuous Internal Evaluation is ensured. The candidate has to appear for Internal Evaluation of 20 marks and University Evaluation for 80 marks.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur
Faculty of Science & Technology
Choice Based Credit System (CBCS): (w.e.f.2020-21): Draft Structure for B. Sc-II

Subject/ Core Course	Name and Type of the Paper		No. of papers/ Practical	Hrs/week			Total Marks Per Paper	UA	CA	Credits
	Type	Name		L	T	P				
Class :	B.Sc.- II : semester-III									
Core (*Students can opt any Three subjects among the Four Subjects offered at B.Sc.I. Out of Three Subjects offered One Subject will be the Core Subject OR	C-5	Paper-V	3.0	--	--	50	40	10	4.0	
		Paper-VI	3.0	--	--	50	40	10		
	C-6	Paper-V	3.0	--	--	50	40	10	4.0	
		Paper-VI	3.0	--	--	50	40	10		
	C-7 (Zoology)	Paper-V: Cell Biology	3.0	--	--	50	40	10	4.0	
		Paper-VI: Principles of Ecology	3.0	--	--	50	40	10		
		SEC-1								
		GE-3								
	Grand Total			18	--	--	300	240	60	12
	Class :	B.Sc.- II Semester – IV								
Core (*Students can opt any Three subjects among the Four Subjects offered at B.Sc.I. Out of Three Subjects offered One Subject will be the Core Subject OR Students can opt any Two subjects among the Four Subjects offered at B.Sc.I. Out of Two Subjects One Subject will be the Core Subject and any One Subject among the other will be Elective Subject	C-8	Paper-VII	3.0	--	--	50	40	10	4.0	
		Paper-VIII	3.0	--	--	50	40	10		
	C-9	Paper-VII	3.0	--	--	50	40	10	4.0	
		Paper-VIII	3.0	--	--	50	40	10		
	C-10 (Zoology)	Paper-VII Fundamentals of Biochemistry	3.0	--	--	50	40	10	4.0	
		Paper-VIII Physiology- Control & Coordination	3.0	--	--	50	40	10		

	SEC-2								
	GE-4								
	Environmental Studies		3.0	--	--	50	40	10	NC
Total (Theory)			21	--	--	350	280	70	12
Practical	C-5 & C-8	Pr. III&IV	--	--	8	100	80	20	4.0
	C-6 & C-9	Pr. III&IV	--	--	8	100	80	20	4.0
	C-7 & C-10 (Zoology)	Pr. I: (Cell Biology & Principles of Ecology) & Pr. II: (Fundamentals of Biochemistry & Physiology-Control & Coordination)	--	--	8	100	80	20	4.0
	GE-3 & GE-4								
Total (Practical)					24	300	240	60	12
Grand Total			39		24	950	760	190	36

*Core Subjects

Chemistry/Physics/Electronics/Computer Science/Mathematics/Statistics/Botany/Zoology/
Microbiology/Geology/ Geography/Psychology

Core Subjects- (Additional)-Geochemistry/Biochemistry/Meteorology/Plant Protection

Summary of the Structure of B.Sc. Programme as per CBCS pattern

Class	Semester	Marks-Theory	Credits-Theory	Marks-Practical	Credits-Practicals	Total – credits
B.Sc.-II	III	300	12	--	--	12
	IV	350	12	300	12	24
Total		650	24	300	12	36

B.Sc. Programme :

Total Marks : Theory + Practical's = 650 + 300 = 950

Credits : Theory + Practical's = 12 + 24 = 36

Numbers of Papers Theory: Ability Enhancement Course (AECC) : 00

Theory: Discipline Specific Elective Paper (DSE) : 00

Theory: CC : 06

Skill Enhancement Courses : 00

GE : 00

Total : Theory Papers :

: Practical Papers :

Abbreviations:

L: Lectures
T: Tutorials
P: Practicals
UA : University Assessment
CA : College Assessment
DSC / CC: Core Course
AEC : Ability Enhancement Course
DSE : Discipline Specific Elective Paper
SEC : Skill Enhancement Course
GE : Generic Elective
CA: Continuous Assessment
ESE: End Semester Examination

PAH SOLAPUR UNIVERSITY, SOLAPUR
Faculty of Science
Choice Based Credit System (CBCS)
(W.e.f. 2020-21)

• Title of the Course: B.Sc. Part-II

• Subject: Zoology

• **Introduction:** This course provides a broad overview of Zoology and to produces expert hands that would have sufficient knowledge and expertise to solve the urgent problems of the region by using Zoology. The course structure is basic science centric where students learn core science and are taught necessary fundamental subject for that purpose.

• **Objectives of the course: The objectives of B. Sc. Zoology course are:**

To provide an intensive and in depth learning to the students in field of Zoology. Beyond simulating, learning, understanding the techniques, the course also addresses the underlying recurring problems of disciplines in today scientific and changing world. To develop awareness & knowledge of different organization requirement and subject knowledge through varied branches and research methodology in students. To train the students to take up wide variety of roles like researchers, scientists, consultants, entrepreneurs, academicians, industry leaders and policy.

• **Course outcome and Advantages:** Zoology has tremendous job potential. The successful students will be able to establish research organizations with the help of agriculture, environment protection and also their own industry for transgenic animals, clinical pathology, genetic counseling, human karyotyping etc. Scientific Research Organizations. Universities in India & abroad.

• Medium of Instruction: English

• Syllabus Structure:

• The University follows semester system.

• An academic year shall consist of two semesters.

• B.Sc. Part-II Zoology shall consist of two semesters: Semester III and Semester IV

In semester III: there will be two DSC papers having paper V and paper VI of 100 marks. There will a **Compulsory paper on “Ability Enhancement Compulsory Course (AECC)”** on Environmental Studies

In Semester IV: there will be two DSC papers having paper VII and paper VIII of 100 marks.

The scheme of evaluation of performance of candidates shall be based on **University Assessment (UA)** as well as **College Internal Assessment (CA)** as given below.

For B.Sc.Part-II Zoology Sem III & IV the “internal assessment” will be based on Internal tests, Home assignment, Tutorials, Open Book Examination, Seminars, Group discussion, Brain storming sessions etc. as given below.

• **Practical course examination** is of 100 marks shall be conducted at the end of semester II. The practical examination of 100 marks shall also consist of **80 marks for University practical assessment** and **20 marks for college internal assessment (CA)**.

• **Scheme of Evaluation:** As per the norms of the grading system of evaluation, out of 100 marks, the candidate has to appear for college internal assessment of 20 marks and external evaluation (University assessment) of 80 marks.

Semester – III: Theory: (100 marks): Comprising DSC-

a) University Examination (UA) (80 marks): No. of theory papers: 2 (paper V and paper VI of 40 marks each)

b) Internal Continuous Assessment (CA) (20 marks) No. of theory papers: 2 (paper V and paper VI of 10 marks each)

c) **Compulsory paper on “Ability Enhancement Compulsory Course (AECC)” on Environmental Studies**

Internal test- Home assignment / tutorials / seminars / viva/ group discussion/ outreach programs.

Semester – IV: Theory: (100 marks): Comprising DSC-

a) University Examination (UA) (80 marks): No. of theory papers: 2 (paper VII and paper VIII of 40 marks each)

b) Internal Continuous Assessment (CA) (20 marks) No. of theory papers: 2 (paper VII and paper VIII of 10 marks each)

Internal test- Home assignment / tutorials / seminars / viva/ group discussion/ outreach programs.

Practical Examination: (100 marks)

University Examination (80 marks): No. of practicals’: 02

Practical-I: Based on papers V & VI : (40 UA + 10 CA)

Practical-II: Based on papers VII & VIII : (40 UA + 10 CA)

Internal Continuous Assessment: (20 marks): Practical-I (10) + Practical-II (10)

(a) Internal practical test and

(b) Viva/group discussion/model or chart/attitude/attendance/overall behavior

(c) University practical examination of 80 marks (Practical I & II for two separate days) will be conducted at the end of semester IV

Passing Standard:

The student has to secure a minimum of 4.0 grade points (Grade C) in each paper. A student who secure less than 4.0 grade point (39% or less marks, Grade FC/FR) will be declared fail in that paper and shall be required to reappear for respective paper. A student who failed in University Examination (theory) and passed in internal assessment of a same paper shall be given FC Grade. Such student will have to reappear for University Examination only. A student who fails in internal assessment and passed in University examination (theory) shall be given FR Grade. Such student will have to reappear for both University examination as well as internal assessment. In case of Annual pattern/old semester pattern students/candidates from the mark scheme the candidates shall appear

for the same 70 marks of external examination and his performance shall be scaled to 100 marks.

• **ATKT:**

Candidate passed in all papers, except 5 (five) papers combined together of semester I and II of B.Sc. Part-I Zoology examination shall be permitted to enter upon the course of Semester III of B.Sc. Part-II Zoology

Semester- III (Theory)

Paper	Title	Marks
V	Cell Biology	50 (40- UA and 10-CA)
VI	Principles of Ecology	50 (40- UA and 10-CA)

Semester- IV (Theory)

Paper	Title	Marks
VII	Fundamentals of Biochemistry	50 (40- UA and 10-CA)
VIII	Physiology-Control & Coordination	50 (40- UA and 10-CA)

PRACTICALS

PRACTICAL	Title	Marks
I	Cell Biology & Principles of Ecology	50 (40- UA and 10-CA)
II	Fundamentals of Biochemistry & Physiology Control & Coordination	50 (40- UA and 10-CA)
	Total Marks	100 (80-UA + 20-CA)

Zoology

Paper-V

CELL BIOLOGY: THEORY (Credits-02 & contact hours-30)

Unit 1:	Overview of Cells Prokaryotic and Eukaryotic cells, Virus, Viroids	02
Unit 2:	Plasma Membrane Singer & Nicholson's model of plasma membrane. Transport across membranes: An overview of active and passive transport	03
Unit 3:	Endomembrane System Structure and Functions: Endoplasmic Reticulum, Golgi apparatus, Lysosomes	06
Unit 4:	Mitochondria Mitochondria: Ultrastructure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain, functions.	04
Unit 5:	Cytoskeleton Structure and Functions: Microtubules, Microfilaments	04
Unit 6:	Nucleus Structure and functions of Nucleus, Nuclear envelope, Nuclear pore complex, Nucleolus, Chromatin: Euchromatin, Heterochromatin and nucleosome	05
Unit 7:	Cell Division Cell cycle, Mitosis and Meiosis	04
Unit 8:	Cell Signaling • Types of cell signaling, Brief idea of G-Protein Coupled Receptor (GPCR) and Role of secondary messengers (cAMP)	02

SUGGESTED READINGS

- 1) Karp, G. (2010). Cell and Molecular Biology: Concepts and Experiments. VI Edition. John Wiley and Sons. Inc.
- 2) De Robertis, E.D.P. and De Robertis, E.M.F. (2006). Cell and Molecular Biology. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
- 3) Cooper, G.M. and Hausman, R.E. (2009). The Cell: A Molecular Approach. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.
- 4) Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). The World of the Cell. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
- 5) Bruce Albert, Bray Dennis, Lewis Julian, Raff Martin, Roberts Keith and Watson James (2008). Molecular Biology of the Cell, V Edition, Garland publishing Inc., New York and London.

Learning outcomes : Students will come to know about:

- Cellular architecture & their functions at organismic level

- This knowledge will help students in future to explore areas like: oncology, medical diagnostics and treatment
- Understand the functioning of nucleus and extra nuclear organelles and understand the intricate cellular mechanisms involved.
- Acquire the detailed knowledge of different pathways related to cell signaling and apoptosis thus enabling them to understand the anomalies in cancer.
- Develop an understanding how cells work in healthy and diseased states and to give a 'health forecast' by analyzing the genetic database and cell information.
- Get new avenues of joining research in areas such as genetic engineering of cells, cloning, vaccines development, human fertility programme, organ transplant, etc.

PRINCIPLES OF ECOLOGY: THEORY (Credits-02 & contact hours-30)

Unit 1:	Introduction to Ecology History of ecology, Autecology and synecology	02
Unit 2:	Population Ecology Brief idea about attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves.	05
Unit 3:	Animal Associations- Brief idea and definitions <ul style="list-style-type: none">Intraspecific associations: Parental care in fishes, groupism and social behaviorInterspecific associations: commensalism, mutualism, predation and parasitism	05
Unit 4:	Abiotic Factors Introduction & Effects on animals: Temperature, light, water, water hardness, humidity, soil, oxygen and carbon dioxide.	03
Unit 5:	Community Community characteristics: species richness, dominance, diversity indices, abundance.	04
Unit 6:	Ecosystem General characteristics & faunal adaptations in: <ul style="list-style-type: none">Aquatic (freshwater ecosystem: lotic and lentic) &Terrestrial (grassland and desert ecosystem).	05
Unit 7:	Food chain: Pond ecosystem: with reference to food chain, ecological pyramid, energy flow and ecological succession	04
Unit 8	Applied Ecology Brief idea of: Biodiversity hot-spots and sacred groves in India with examples	02

SUGGESTED READINGS:

- 1) Colinvaux, P. A. (1993). Ecology. II Edition. Wiley, John and Sons, Inc.
- 2) Krebs, C. J. (2001). Ecology. VI Edition. Benjamin Cummings.
- 3) Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
- 4) Robert Leo Smith Ecology and field biology Harper and Row publisher
- 5) Ricklefs, R.E., (2000). Ecology. V Edition. Chiron Pres

Learning Outcomes (LO): Students will come to know about

- Ecological principles & applications that govern the planet Earth

- This knowledge will help students in future to explore areas like: biodiversity, conservation biology, forestry & natural resource management
- Know the evolutionary and functional basis of animal ecology.
- Understand what makes the scientific study of animal ecology a crucial and exciting endeavor.
- Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field.
- Analyze a biological problem, derive testable hypotheses and then design experiments and put the tests into practice.
- Solve the environmental problems involving interaction of humans and natural systems at local or global level.

Semester-IV

B.Sc.-II Zoology (CBCS): Semester-IV

PAPER-VII: FUNDAMENTALS OF BIOCHEMISTRY

THEORY (CREDITS 2; Contact Hours-30)

- Unit 1: Carbohydrates (04)**
Structure and biological Significance of: Monosaccharides, Disaccharides, Polysaccharides and Glycoconjugates
- Unit 2: Lipids (04)**
Structure and biological Significance of: Physiologically important of saturated and unsaturated fatty acids, Tri-acylglycerols, Phospholipids, Glycolipids, Steroids
- Unit 3: Amino Acids (03)**
Amino acids: Structure, Classification and General Properties of α -amino acids;
- Unit 4: Proteins: (02)**
Levels of organization in proteins (primary, secondary, tertiary & quaternary); Simple and conjugate proteins with examples
- Unit- 5: Immunoglobulins: (02)**
Basic Structure, Classes and biological significance
- Unit 6: Nucleic Acids (04)**
Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids: Base pairing, Denaturation and Renaturation of DNA; Types of DNA and RNA.
- Unit 7: Central Dogma (04)**
Basic concepts of replication, transcription and translation in prokaryotes
- Unit 8: Enzymes (07)**
Nomenclature and classification; Co-factors; Properties of enzymes; Mechanism of enzyme action; Factors affecting enzyme actions; Enzyme inhibition, Isozymes

Learning Outcome:

After successfully completing this course, the students will be able to:

- Understand the structure and biological significance of carbohydrates, amino acids, proteins, lipids and nucleic acids.
- Understand the structure and function of immunoglobulins.
- Understand the concept of enzyme, its mechanism of action and regulation.
- Understand the process of DNA replication, transcription and translation.
- Learn the preparation of models of peptides and nucleotides.
- Learn biochemical tests for amino acids, carbohydrates, proteins and nucleic acids.
- Learn measurement of enzyme activity and its kinetics.

PAPER-VIII

ANIMAL PHYSIOLOGY: CONTROLLING AND COORDINATING SYSTEMS

THEORY (CREDITS 2; Contact Hours-30)

- Unit 1: Tissues (04)**
Structure, location, classification and functions of: epithelial tissue, connective tissue, muscular tissue and nervous tissue :
Blood –Types of blood cells(RBC,WBC ,Platelets , Plasma) , functions of blood
- Unit 2: Histology of following mammalian organs: (04)**
i) Tooth ii) Salivary gland iii) Stomach iv) Ileum
v) Liver vi) Pancreas vii) Kidney viii) Testis ix) Ovary
- Unit 3: Nervous System (04)**
Ultrastructure of neuron, resting membrane potential, origin of action potential and its propagation across the nerve fibers; Structure of Synapse and Synaptic transmission,
- Unit 4: Muscle (03)**
Types of muscles (smooth, Striated, cardiac) and Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction.
- Unit 5: Reproductive Physiology (03)**
Pituitary gland & its hormones, Sex hormones (male & female)
- Unit 6: Reproductive Cycle (04)**
Oestrous and Menstrual cycle, Hormonal control of pregnancy, parturition and lactation; Contraception methods: Physical, oral contraceptives pills, IUD, surgical methods
- Unit 7: In-vitro Fertilization (02)**
Technique of IVF and its applications
- Unit 8: Endocrine System (06)**
Histology, hormonal secretions & their functions and disorders of following endocrine glands- Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal.

*Note: With reference to mammals.

Learning outcomes:

After successfully completing this course, the students will be able to:

- Acquire knowledge of the coordinated physiological functioning
- Realize that very physiological mechanisms are used in very diverse organisms.
- Understand how cells, tissues, and organisms function at different levels.
- Develop an understanding of the related disciplines, such as cell biology, neurophysiology, pharmacology, biochemistry etc
- Get a flavor of research by working on project besides improving their writing skills. It will further enable the students to think and interpret individually.
- Undertake research in any aspect of animal physiology in future.

REFERENCES:

CELL BIOLOGY:

- Karp, G. (2010). Cell and Molecular Biology: Concepts and Experiments. VI Edition. John Wiley and Sons. Inc.
- De Robertis, E.D.P. and De Robertis, E.M.F. (2006). Cell and Molecular Biology. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
- Cooper, G.M. and Hausman, R.E. (2009). The Cell: A Molecular Approach. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.
- Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). The World of the Cell. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
- Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). Molecular Biology of the Cell, V Edition, Garland publishing Inc., New York and London.

ECOLOGY:

- Colinvaux, P. A. (1993). Ecology. II Edition. Wiley, John and Sons, Inc.
- Krebs, C. J. (2001). Ecology. VI Edition. Benjamin Cummings.
- Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
- Robert Leo Smith Ecology and field biology Harper and Row publisher
- Ricklefs, R.E., (2000). Ecology. V Edition. Chiron Pres

FUNDAMENTALS OF BIOCHEMISTRY:

- Cox, M.M and Nelson, D.L. (2008). Lehninger's Principles of Biochemistry, V Edition, W.H. Freeman and Co., New York.
- Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007). Biochemistry, VI Edition, W.H. Freeman and Co., New York.
- Murray, R.K., Bender, D.A., Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009). Harper's Illustrated Biochemistry, XXVIII Edition, International Edition, The McGraw-Hill Companies Inc.
- Hames, B.D. and Hooper, N.M. (2000). Instant Notes in Biochemistry, II Edition, BIOS Scientific Publishers Ltd., U.K.
- Watson, J.D., Baker, T.A., Bell, S.P., Gann, A., Levine, M. and Losick, R. (2008). Molecular Biology of the Gene, VI Edition, Cold Spring Harbor Lab. Press, Pearson Pub.

PHYSIOLOGY: CONTROL & COORDINATION:

- Guyton, A.C. & Hall, J.E. (2006). Textbook of Medical Physiology. XI Edition. Hercourt Asia PTE Ltd. /W.B. Saunders Company.
- Tortora, G.J. & Grabowski, S. (2006). Principles of Anatomy & Physiology. XI Edition John Wiley & sons
- Victor P. Eroschenko. (2008). diFiore's Atlas of Histology with Functional correlations. XII Edition. Lippincott W. & Wilkins.

Practical
PAH Solapur University, Solapur, Faculty of Science
Choice Based Credit System (CBCS)
B.Sc.-II Zoology
(2020-2021 : w.e.f. June 2019) **

Practical-I (Paper-V & VI): Cell Biology and Principles of Ecology (04 Credits)

1. Preparation of temporary stained squash of onion root tip to study various stages of mitosis.
2. Study of various stages of meiosis in onion flower buds.
3. Demonstration/ Observation of Barr body using permanent slide(s) (*spotter*)
4. Study of principle and procedure and technique using permanent slide (*spotter*)
 - i) DNA by Feulgen technique.
 - ii) Mucopolysaccharides by Periodic Acid Schiffs Reaction (PAS)
5. Study and construction of ecological pyramid from given data:
 - i) **Members of Grass land ecosystem** –
Grasshopper, Rat Snake, Grass, Herbs, Shrubs, Weeds, Trees, Vulture, Squirrel, Earthworm, Centipede, Scorpion , Rabbit and Indian Bustard.
 - ii) **Members of Pond ecosystem** –
Sponge, Nepa, Leech, Planaria, Hydra, Lymnea, Planorbis, Heron, Kingfisher, Cyclops, Daphnia, Tortoise , Diatoms Vallisneria, Hydrilla, Chara and Spirogyra.
6. Calculation of Shannon-Weiner diversity index from the given data/ model.
7. Study of an aquatic ecosystem: Identification of Zooplankton with the help of permanent slides (*Spotters*),
8. Estimation of Dissolved Oxygen (Winkler's method) from given sample,
9. Estimation of Carbondioxide (CO₂) from given sample.
- 10 .Estimation of Total Hardness content from given sample.
- 11 Study Visit: Report on a visit to National / Central / State institutes / Local water bodies/National Park/Biodiversity Park/Wild life sanctuary.

Practical-II
(Paper-VII & VIII):

FUNDAMENTALS OF BIOCHEMISTRY and ANIMAL PHYSIOLOGY: CONTROLLING
AND COORDINATING SYSTEMS (CREDITS-04) **

1. Qualitative tests of functional groups in carbohydrates, proteins and lipids.
2. Estimation of protein by colorimetric method.
3. Estimation of carbohydrates by colorimetric method.
4. Demonstration of paper chromatography of amino acids.
5. Action of amylase or papain enzyme under optimum conditions.
6. Effect of pH, temperature and inhibitors on the action of amylase.
7. Demonstration of proteins separation by SDS-PAGE.
8. Recording of simple muscle twitch/ Cardiogram – demonstration. (Virtual frog/ computer generated)
(Analysis of given graph of Frog- muscle twitch or cardiogram In the examination students are provided with any one computer generated graph and supposed to ‘Analyze the given graph and explain details of principle, procedure, result, Inference and viva-voce based on the given practical is expected)
9. Study of permanent slides (T.S./V,S.) - of Mammalian organs using permanent slides:
i) Tooth ii) Salivary gland iii) Stomach iv) Ileum v) Liver vi) Pancreas vii) Kidney
viii) Testis ix) Ovary
10. Study of ABO blood group system and blood group antigens
11. Microtomy: Study of principle , procedure and mechanism of micro-technique and microtome :
flow chart of technique, study of procedure and observation of HE staining technique/ whole mount
using permanent slides (study of protocol using flowchart).
12. Study visit: Visit to wetlands, medical college, pathology laboratory and blood bank

OR

13. Preparation and submission of small project/ review on topics related to ecology, cell biology, biochemistry and physiology

****Note:**

As per the guidelines of UGC notification number F.14-6/2014(CPP-II) dated 1stAugust, 2014 it is now essential to make necessary modifications to stop dissection and promote and orient students towards the knowledge component rather than skill development. However, ITC based virtual dissections are promoted. Now, the responsibility to discontinue dissections and use of animals in experiments totally rests on concerned authorities of respective colleges/Institutes. As per the notification it is important to encourage the field trips and observations without disturbing the biodiversity. For laboratory observations existing permanent slides and specimens should be shown. As per the guidelines of UGC , all the Zoology departments should be empowered with infrastructure to adopt Information communication technology (ICT) required for the purpose of virtual dissections for which virtual class room / laboratory to be enriched with few computers (according to the strength of students),internet facility , printer etc.

**Skeleton paper for practical examination
(University Examination for 40 Marks)**

Practical-I (Paper-V & VI)		
Cell Biology and Principles of Ecology		
Questions		Marks
Q-1:	Preparation of temporary stained squash of onion root tip to study various stages of mitosis OR Study of various stages of meiosis in onion flower buds.	08
Q-2:	Estimation from given sample - of Dissolved Oxygen (Winkler's method) OR Carbondioxide (CO ₂) OR Total Hardness content	08
Q:3:	Study and construction of ecological pyramid from given data: <i>i) Members of Grass land ecosystem –</i> Grasshopper, Rat Snake, Grass, Herbs, Shrubs, Weeds, Trees, Vulture, Squirrel, Earthworm, Centipede, Scorpion , Rabbit and Indian Bustard. OR <i>ii) Members of Pond ecosystem –</i> Sponge, Nepa, Leech, Planaria, Hydra, Lymnea, Planorbis, Heron, Kingfisher, Cyclops, Daphnia, Tortoise , Diatoms Vallisneria, Hydrilla, Chara and Spirogyra.	08
Q:4	Spotting / Identification (Any four) Zooplankton with the help of permanent slides (chart/ model /photo) / Bar body (<i>Spotters</i>).	08
Q:5	Submission of tour report and viva-voce	04
Q:6	Submission of certified journal	04
Total Marks		40

Practical-II (Paper-VII & VIII):		
Fundamentals of Biochemistry and Animal Physiology: Controlling and Coordinating Systems		
Questions		Marks
Q-1:	Qualitative tests of functional groups in carbohydrates, proteins and lipids. Or Estimation of protein and carbohydrates by colorimetric method.	08
Q-2:	Action of amylase or papain enzyme under optimum conditions Or Effect of pH, temperature and inhibitors on the action of amylase. Or Study of ABO blood group system and blood group antigens	08
Q:3:	Recording of simple muscle twitch demonstration. / Cardiogram (Virtual frog) Or Microtomy: Study of principle and mechanism of microtechnique: flow chart of technique, study of procedure and observation of Haemotoxylene Eosine staining technique using permanent slides.	08
Q:4	Spotting / Identification (any 4). Mammalian T.S. or V.S. - Tooth / Salivary gland / Stomach / Ileum / Liver / Pancreas / Kidney / Testis / Ovary	08
Q:5	Submission of tour report / Project/ review and viva-voce	04
Q:6	Submission of certified journal	04
Total Marks		40

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



Name of the Faculty: Science and Technology

CHOICE BASED CREDIT SYSTEM

Syllabus: BOTANY

Name of the Course: B.Sc. I (Sem-I&II)

(Syllabus to be implemented from w.e.f. June 2019)

Subject/ Core Course	Name and Type of the Paper		No. of papers/ Practical	Hrs/week			Total Marks Per Paper	UA	CA	Credits
	Type	Name		L	T	P				
Class : B.Sc.- I Semester – I										
Ability Enhancement Course(AECC)	English(communication skill)		Paper- I	4.0			100	80	20	4.0
Core (*Students can opt any Four Subjects from the Twelve Subjects Listed below. Out of these Four Subjects One Subject will be CORE and other Three will be ELECTIVE Subjects.)	DSC 1A Microbiology, Phycology		Paper-I	2.5	--	--	50	40	10	4.0
	Fungi, Archegoniate		Paper-II	2.5	--	--	50	40	10	
	DSC 2A		Paper-I	2.5	--	--	50	40	10	4.0
			Paper-II	2.5	--	--	50	40	10	
	DSC 3A		Paper-I	2.5	--	--	50	40	10	4.0
			Paper-II	2.5	--	--	50	40	10	
	DSC 4A		Paper-I	2.5	--	--	50	40	10	4.0
			Paper-II	2.5	--	--	50	40	10	
Total				24	--	--	500	400	100	20
Class : B.Sc.- I Semester – II										
Ability Enhancement Course(AECC)	English (communication skill)		Paper- II	4.0			100	80	20	4.0
Core (*Students can opt any Four Subjects from the Twelve Subjects Listed below. Out of these Four Subjects One Subject will be CORE and other Three will beELECTIVE Subjects.)	DSC1B Plant Ecology		Paper-III	2.5	--	--	50	40	10	4.0
	Taxonomy of Angiosperms		Paper-IV	2.5	--	--	50	40	10	
	DSC 2B		Paper-III	2.5	--	--	50	40	10	4.0
			Paper-IV	2.5	--	--	50	40	10	
	DSC 3B		Paper-III	2.5	--	--	50	40	10	4.0
			Paper-IV	2.5	--	--	50	40	10	
	DSC 4B		Paper-III	2.5	--	--	50	40	10	4.0
			Paper-IV	2.5	--	--	50	40	10	
Democracy, Elections and Good Governance			3.0			50	40	10	NC	
Total (Theory)				27	--	--	550	440	110	20
Core	DSC 1 A & 1B		Practical I and II	--	--	4	100	80	20	4.0
	DSC 2 A & 2B		Practical I and II	--	--	4	100	80	20	4.0
	DSC 3A & 3B		Practical I and II	--	--	4	100	80	20	4.0
	DSC 4A & 4B		Practical I and II	--	--	4	100	80	20	4.0
Total (Practical)						16	400	320	80	16
Grand Total				51		16	1450	1160	290	56

Core Subject : Botany

PUNYASHLOK AHILYADEVI HOLKAR

Solapur University, Solapur

Faculty of Science

Choice Based Credit System (CBCS) (w.e.f.2020-21)

Subject/ Core Course	Name and Type of the Paper		No. of papers/ Practical	Hrs/week			Total Marks Per Paper	UA	CA	Credits	
	Type	Name		L	T	P					
Class : B.Sc.- II Semester – III											
Core (*Students can opt any Three subjects among the Four Subjects offered at B.Sc.I. Out of Three Subjects offered One Subject will be the Core Subject OR Students can opt any Two subjects among the Four Subjects offered at B.Sc.I. Out of Two Subjects One Subject will be the Core Subject and any One Subject among the other will be Elective Subject	DSC 1C	Paper-V	3.0	--	--	50	40	10	4.0		
		Paper-VI	3.0	--	--	50	40	10			
	DSC 2C	Paper-V	3.0	--	--	50	40	10	4.0		
		Paper-VI	3.0	--	--	50	40	10			
	DSC 3C	Paper-V	3.0	--	--	50	40	10	4.0		
		Paper-VI	3.0	--	--	50	40	10			
	AECC - Environmental Studies SEC-1			3.0	--	--	-	-	-	NC	
				2.5			50	40	10	2.0	
	Grand Total				23.5	--	--	350	280	70	14
	Class : B.Sc.- II Semester – IV										
Core (*Students can opt any Three subjects among the Four Subjects offered at B.Sc.I. Out of Three Subjects offered One Subject will be the Core Subject OR Students can opt any Two subjects among the Four Subjects offered at B.Sc.I. Out of Two Subjects One Subject will be the Core Subject and any One Subject among the other will be Elective Subject	DSC 1D	Paper-VII	3.0	--	--	50	40	10	4.0		
		Paper-VIII	3.0	--	--	50	40	10			
	DSC 2D	Paper-VII	3.0	--	--	50	40	10	4.0		
		Paper-VIII	3.0	--	--	50	40	10			
	DSC 3D	Paper-VII	3.0	--	--	50	40	10	4.0		
		Paper-VIII	3.0	--	--	50	40	10			
	SEC-2			2.5			50	40	10	2.0	
Total (Theory)				20.5	--	--	350	280	70	14	
DSE (Practical)	DSC 1C & 1D	Pr. III&IV	--	--	8	100	80	20	4.0		
	DSC 2C & 2D	Pr. III&IV	--	--	8	100	80	20	4.0		
	DSC 3C & 3D	Pr. III&IV	--	--	8	100	80	20	4.0		
Total (Practical)					24	300	240	60	12		

Grand Total			43.5		24	1000	800	200	40
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Draft Structure for B. Sc-II

Core Subject : Botany

PUNYASHLOK AHILYADEVI HOLKAR

Solapur University, Solapur

Faculty of Science

Choice Based Credit System (CBCS)

(w.e.f.2021-22)

Draft Structure for B. Sc-III

Subject/ Core Course	Name and Type of the Paper		No. of papers/ Practical	Hrs/week			Total Marks Per Paper	UA	CA	Credits	
	Type	Name		L	T	P					
Class :	B.Sc.- III Semester – V										
Ability Enhancement Course(AECC)	English (Business English)		Paper- III	4.0	--	--	100	80	20	4.0	
Discipline Specific Elective (DSE)	(Students can opt any one subjects among the three Subjects excluding interdisciplinary offered at B.Sc II.		DSE-1A	Paper- IX	3	--	--	100	80	20	4.0
	DSE- 2 A	Paper -X	3	--	--	100	80	20	4.0		
	DSE- 3 A	Paper- XI	3	--	--	100	80	20	4.0		
	DSE- 4 A	Paper- XII	3	--	--	100	80	20	4.0		
	SEC- 3		2.5	--	--	50	40	10	2.0		
Grand Total				18.5	--	--	550	440	110	22	
Class :	B.Sc.- III Semester –VI										
Ability Enhancement Course(AECC)	English (Business English)		Paper IV	4.0	--	--	100	80	20	4.0	
DSE	(Students can opt any one		DSE- 1B	Paper -XIII	3.0	--	--	100	80	20	4.0
			DSE- 2B	Paper- XIV	3.0	--	--	100	80	20	4.0

subjects among the three									
Subjects excluding interdisciplinary offered at B.Sc. II.									
	DSE- 3 B	Paper- XV	3.0	--	--	100	80	20	4.0
	DSE- 4 B	Paper- XVI	3.0	--	--	100	80	20	4.0
SEC	SEC- 4		2.5	--	--	50	40	10	2.0
Total (Theory)			18.5	--	--	550	440	110	22
DSE (Practical Annual Exam)	DSE- 1 A&B	Practical- IX & XIII	--	--	4	100	80	20	4.0
	DSE -2 A&B	Practical- X&XIV	--	--	4	100	80	20	4.0
	DSE- 3 A&B	Practical- XI&XV			4	100	80	20	4.0
	DSE- 4 A& B	Practical- XII & XVI			4	100	80	20	4.0
	Total (Practicals)					24	400	320	80
Grand Total			37.5		24	1500	1200	300	56

Summary of the Structure of B.Sc. Programme
as per CBCS pattern

Class	Semester	Marks-Theory	Credits-Theory	Marks-Practical	Credits-Practicals	Total – credits
B.Sc.-I	I	500	20	--	--	20
	II	550	20	400	16	36
B.Sc.-II	III	350	14	--	--	14
	IV	350	14	300	12	26
B.Sc.-III	V	550	22	--	--	22
	VI	550	22	400	16	38
Total		2850	112	1100	44	156

B.Sc. Programme:

Total Marks : Theory + Practical's = 2850 + 1100 = 3950

Credits : Theory + Practical's = 112 + 44 = 156

Numbers of Papers Theory: Ability Enhancement Course (AECC) : 05

Theory: Discipline Specific Elective Paper (DSE) : 08

Theory: DSC : 14

Skill Enhancement Courses : 04

Total : Theory Papers : 31

Abbreviations:

L: Lectures

T: Tutorials

P: Practicals

UA: University Assessment

CA: College Assessment

DSC / CC: Core Course

AEC: Ability Enhancement Course

DSE: Discipline Specific Elective Paper

SEC: Skill Enhancement Course

GE: Generic Elective

CA: Continuous Assessment

ESE: End Semester Examination

PUNYASHLOK AHILYADEVJI HOLKAR
Solapur University, Solapur
Faculty of Science
Choice Based Credit System (CBCS), (w.e.f June.2019-20)
Structure for B. Sc-I
***Core Subjects: Botany**

Objective and Outcome of the Course
Syllabus of B. Sc.-I, CBCS Pattern
Botany, w.e.f. June-2019
DSC -1-A

Semester- I

Paper No-I: Microbiology and Phycology

Unit 1: Introduction of Microbiology

Objective: To get the knowledge about the basic concepts in microbiology

Outcome: The student can understand the basic concept of microbiology

Unit 2: Microbes

Objective: To get the knowledge about the characters, structure and economic importance of viruses. Knowledge about the forms, size and diversity of bacteria and about the Mycoplasma

Outcome: The student can understand in detail about the viruses, diversity of bacteria and about the Mycoplasma

Unit 3: Phycology

Objective: To get the knowledge about the characters, classification and economic importance of algae

Outcome: The student can understand importance of algae

Unit:4: Cyanophyta

Objective: To get the knowledge about the general Characters, occurrence, classification, Thallus organization & reproduction of Cyanophyta division along with the example *Nostoc*

Outcome: The student can understand in detail about the division Cyanophyta along with its one detailed example of *Nostoc*

Unit 5: Chlorophyta

Objective: To get the knowledge about the general Characters, occurrence, classification, Thallus organization & reproduction of chlorophyta division along with the example *Nostoc*

Outcome: The student can understand in detail about the division chlorophyta along with its one detailed example of *Spirogyra*

Paper -II

Fungi and Archegoniate

Unit 1: Fungi

Objective: To get the knowledge about characters, mode of nutrition & classification of the True fungi.

Outcome: The student can understand about the general introduction of true fungi.

Zygomycotina

Objective: To get the knowledge about the fungal division Zygomycotina

Outcome: The student can understand about division of Zygomycotina.

Ascomycotena

Objective: To get the knowledge about the fungal division Ascomycotina.

Outcome: The student can understand about the division of Ascomycotina

Unit 2: Archegoniate

Objective: To get Knowledge about Introduction & general characters of Archegoniate

Outcome: The student get an detailed idea about Archegoniate

Unit 3: Bryophytes

Objective: To get the knowledge about the Bryophytes with suitable example

Outcome: The student can understand about the Bryophytes and life cycle of *Riccia* with its economic importance.

Unit 4: Pteridophyta

Objective: To get the knowledge about the Pteridophytes with suitable example.

Outcome: The student can understand about the Pteridophytes and life cycle of *Selaginella* with its economic importance..

Unit 5: Gymnosperms

Objective: To get the knowledge about the Gymnosperms with suitable example

Outcome: The student can understand about the Gymnosperms and life cycle of *Cycas* with its economic importance.

Paper No. III

Plant Ecology

Unit 1: Introduction

Objective: To get the knowledge about the climatic and Edaphic factors of environment

Outcome: The student can understand about the Climatic and Edaphic factors of environment.

Unit 2: Ecological Adaptations

Objective: To get the knowledge about the Ecological adaptations.

Outcome: The student can understand about the Ecological adaptations in plants.

Unit 3: Plant communities

Objective: To get the knowledge about the Forms & structure of community along with Qualitative and quantitative characters of community

Outcome: The student can understand about the Plant communities

Unit 4: Ecology

Objective: To get the knowledge about Introduction, Components of ecosystem, Ecological pyramids with Food chain and food webs.

Outcome: The student can understand about the concepts of ecology

Unit 5: Ecological succession

Objective: To get the knowledge about the Ecological succession

Outcome: The student can understand about the Ecological succession

Taxonomy of Angiosperms

Unit 1: Introduction

Objective: To get knowledge about different concepts in taxonomy

Outcome: The student can understand about importance of taxonomy

Unit 2: Classification

Objective: To understand different classification systems and its merit & demerits

Outcome: The student can understand about classification systems in taxonomy

Unit 3: Identification and nomenclature

Objective: To understand Identification methods, Nomenclature, Principles and Rules of ICBN

Outcome: The student can understand different methods of classification and rules of nomenclature

Unit 4: Herbarium and Botanical Garden

Objective: To understand technique of herbarium preparation and significance

Outcome: The student can understand technique and botanical gardens in India

Unit 5: Study of Angiosperm families

Objective: To study morphological & reproductive characters of 4 families

Outcome: The student can understand detailed identifying characters of family

Botany, w.e.f. June-2019

DSC -1-A

Semester- I

Paper No-I: Microbiology & Phycology

Microbiology & Phycology (Lecture 35)

- Unit-1** : Introduction of microbiology (02 lecture)
- Unit-2** **Microbes** (09 lectures)
- 2.1** **Viruses:** General characters, structure, classification (plant viruses) and economic importance of viruses.
- 2.2** **Bacteria:** General characters of bacteria, structure and Economic importance.
- 2.3** **Mycoplasma:** General characters, Structure, classification and significance.
- Unit-3** **Phycology** (09 lectures)
- 3.1** Introduction, general characters and classification of algae (As per Smith-1955) up to class.
- 3.2** Economic importance of Algae
- Unit-4** **Cyanophyta** (07 lectures)
- 4.1** General Characters
- 4.2** Study of *Nostoc* – Occurrence, Classification, thallus structure and reproduction. (excluding developmental stages)
- Unit-5** **Chlorophyta** (08 lectures)
- 5.1** General Characters
- 5.2** Study of *Spirogyra* - Occurrence, Classification, thallus structure and reproduction (excluding developmental stages)

References Book

1. Lee, R.E. (2008). Phycology, Cambridge University Press, Cambridge. 4th edition.
2. Prescott, L.M., Harley J.P., Klein D. A. (2005). Microbiology, Mc Graw Hill, India. 6th edition.
3. Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West Press, Delhi.
4. Sahoo, D. (2000). Farming the ocean: seaweeds cultivation and utilization. Aravali International, New Delhi.
5. Campbell, N.A., Reece J.B., Urry L.A., Cain M.L., Wasserman S.A. Minorsky P.V., Jackson R.B. (2008). Biology, Pearson Benjamin Cummings, USA. 8th edition.
6. Pelczar, M.J. (2001) Microbiology, 5th edition, Tata Mc Graw-Hill Co, New Delhi.

Paper-II: Fungi & Archegoniate

Fungi & Archegoniate

(Lecture 35)

Unit-1	Fungi	(08lecture)
1.1	General characters, Nutrition and classification of fungi up to class (as per Ainsworth).	
1.2	Economic importance of Fungi	
1.3	Study of <i>Mucor</i> - Occurrence, Thallus organisation, classification and Life cycle. (excluding developmental stages)	
1.4	Study of Yeast-Occurrence, Thallus organization, classification and life cycle. (excluding developmental stages)	
Unit 2	Archegoniate	(04 Lectures)
2.1	Introduction	
2.2	General characters.	
Unit 3	Bryophytes	(07 Lectures)
3.1	General characters, and Classification (as per G. M. Smith)	
3.2	Study of <i>Riccia</i> - Occurrence, classification, thallus structure (External and Internal) and reproduction (Excluding development).	
3.3	Economic importance of Bryophytes	
Unit 4	Pteridophytes	(8 Lectures)
4.1	General characters and classification up to class (as per G. M. Smith)	
4.2	Study of <i>Sellaginella</i> - Occurrence, classification, morphology of sporophyte, anatomy (stem) and reproduction (Excluding development).	
4.3	Economic importance of Pteridophyte	
Unit 5	Gymnosperms	(08 Lectures)
5.1	General characters and classification (As per Sporne)	
5.2	Study of <i>Cycas</i> - Occurrence, classification, morphology (Sporophyte, Corolloid root), anatomy of leaflet and reproduction of <i>Cycas</i> (Structure of male and female reproductive structures excluding development).	
5.3	Economical importance of Gymnosperms	

References Book

1. Vashistha, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. S. Chand. Delhi, India.
2. Bhatnagar, S.P. & Moitra, A. (1996). Gymnosperms. New Age International (P) Ltd Publishers, New Delhi, India.
3. Parihar, N.S. (1991). An introduction to Embryophyta: Vol. I. Bryophyta. Central Book Depot. Allahabad.
4. Raven, P.H., Johnson, G.B., Losos, J.B., Singer, S.R. (2005). Biology. Tata McGraw Hill, Delhi.
5. Vander-Poorteri 2009 Introduction to Bryophytes. COP.
6. Agrios, G.N. 1997 Plant Pathology, 4th edition, Academic Press, U.K.
7. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, John Wiley & Sons (Asia) Singapore. 4th edition.
8. Webster, J. and Weber, R. (2007). Introduction to Fungi, Cambridge University Press, Cambridge. 3rd edition.
9. Sethi, I.K. and Walia, S.K. (2011). Text book of Fungi and Their Allies, Macmillan Publishers India Ltd.
10. Sharma, P.D. (2011). Plant Pathology, Rastogi Publication, Meerut, India.
11. Lee, R.E. (2008). Phycology, Cambridge University Press, Cambridge. 4th edition.
12. Prescott, L.M., Harley J.P., Klein D. A. (2005). Microbiology, McGraw Hill, India. 6th edition.
13. Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West Press, Delhi.
14. Sahoo, D. (2000). Farming the ocean: seaweeds cultivation and utilization. Aravali International, New Delhi.
15. Campbell, N.A., Reece J.B., Urry L.A., Cain M.L., Wasserman S.A. Minorsky P.V., Jackson R.B. (2008). Biology, Pearson Benjamin Cummings, USA. 8th edition.
16. Pelczar, M.J. (2001) Microbiology, 5th edition, Tata McGraw-Hill Co, New Delhi.

Syllabus of B. Sc.-I, CBCS Pattern
Botany, w.e.f. June-2019
DSC -1-A
Semester- II

Paper No-III: Plant Ecology

Plant Ecology **(Lecture 35)**

Unit 1: Introduction (05 Lectures)

- 1.1. Climatic factor- Light, Temperature, Humidity, Wind & Rainfall.
- 1.2. Edaphic factor- Soil formation, Soil profile, Classification & Chemical properties of soil.

Unit 2: Ecological Adaptation (8 Lectures)

- 2.1. Introduction.
- 2.2. Hydric Adaptation.
- 2.3. Xeric Adaptation.

Unit 3: Plant communities (8 Lectures)

- 3.1. Introduction.
- 3.2. Forms & structure of community.
- 3.3. Classification.
- 3.4. Qualitative and quantitative characters of community

Unit 4: Ecosystem (8 Lectures)

- 4.1. Introduction.
- 4.2. Concept & type.
- 4.3. Components of ecosystem.
- 4.4. Ecological pyramids.
- 4.5. Food chain and food webs.

Unit 5: Ecological succession (6 Lectures)

- 5.1. Introduction.
- 5.2. Concept & process.
- 5.3. Hydrosere and Xerosere.

References;

1. Kormondy, E.J. (1996). Concepts of Ecology. Prentice Hall, U.S.A. 4th edition.
2. Sharma, P.D. (2010) Ecology and Environment. Rastogi Publications, Meerut, India. 8th edition.
3. Odum, E.P. Ecology. Oxford & F.B.h. Publishing Co. Pvt. LTD - New Delhi.
4. Barbour, M.G., Burk, J.H. and Pitts, W.D. 1987. Terrestrial Plant Ecology. Benjamin Cummings Publication Co., California.
5. Kormondy, E.J. 1996. Concepts of Ecology, Prentice-Hall of India Pvt. Ltd., New Delhi.
6. Hill, M.K. 1997. Understanding Environmental Pollution. Cambridge University Press.
7. Mackenzie, A. et al. 1999. Instant Notes in Ecology. Viva Books Pvt. Ltd., New Delhi.
8. Ashok Bendre / Ashok Kumar Economic Botany Rastogi Publications Shivaji Road, Meerut – 250002 India.
9. Prof. M.A. Khan – Environment, Biodiversity and Conservation S-B Nangia, A.P.H. Publishing Corporation, 5, Ansari Road, Daryaganj New Delhi – 110002.
10. B.P. Pandey – Modern Practical Botany Vol – I / II Chand & Company Ltd. Ramnagar New Delhi – 110055.
11. R.S. Shukla & P. S. Chandel. Plant Ecology. S. Chand & Company LTD. Ram Nagar, New Delhi. 110055.
12. Pava Divan – Environ Protection – Deep & Deep Publications D-I 124, Rajouri Garden, New Delhi – 110027.
13. P.S. Verma / V.K. Agrawal – Concept of Ecology, S. Chand & Lonpan Ltd. Ramnagar, New Delhi – 110055.
14. Eug Warming – Ecology of Plants, Ambey Publications Delhi (India)
15. Eugene P Odum – Ecology Oxford & IBH Publishing Co. Pvt. Ltd. Calcutta, New Delhi.
16. Ishwar Prakash. Desert Ecology. Scientific Publications, Ratandas Road, Jodhpur. - 342001-India.
17. T.W. Woodhead. Plant Ecology. Sonali Publications. New Delhi. 110002.
18. Eug. Warming. Ecology of Plant. Ambey Publications Delhi.
19. Jonathan Silvertown. Introduction To Population Plant Ecology. Longman Singapore .Publisher, LTD.

Paper- IV: Taxonomy of Angiosperms

Taxonomy of Angiosperms

(Lecture 35)

Unit 1:	1.1. Introduction	(4 Lectures)
	1.2. Aims and Principles of Taxonomy	
Unit 2:	Classification	(8 Lectures)
	2.1. Types of classification: Artificial, Natural and Phyllogenetic.	
	2.2 Bentham and Hooker system of classification	
	2.3 Merits and demerits	
Unit 3:	Identification and nomenclature	(8 Lectures)
	3.1 Identification of plants	
	3.2 Nomenclature, Binomial nomenclature of plants	
	3.3 Principles of ICBN.	
Unit 4:	Herbarium and Botanical Garden	(5 Lectures)
	4.1 Herbarium- Steps in preparation and significance.	
	4.2 Botanical gardens of India- Sir J. C. Bose Botanical Garden, Calcutta & Lead Botanical Garden of Shivaji University Kolhapur.	
Unit 5:	Study of Angiosperms families	(10 Lectures)
	5.1 Systematic position, Morphological & distinguishing characters with economic importance of following families:	
	a) Caesalpiniaceae b) Solanaceae	
	c) Nyctaginaceae d) Liliaceae	

References:

1. Morphology of Angiosperms, J M Coulter and C J Chamberlain, Pointer Publishers, Jaipur.
2. Taxonomy of Angiosperm R Pandey, S Chand and Co. Ltd, Ramnagar New Delhi.110055
3. An Introduction to Taxonomy of Angiosperms- Pritish Shukla, Shital P Mishra, Vikas Publishing House, Pvt. Ltd. Gaziabad, UP.
4. A Text Book of Angiosperms-B P Pandey, S Chand and Co Ltd. Ramnagar, New Delhi.110055
5. A Text Book of Botany -'Angiosperm,V Singh C Pande, D K Jain, Rastogi Publication, Shivaji Road Meerut.250002
6. Taxonomy of Angiosperm, Neeru Mathur, Sonali Publications, New Delhi, 110002.
7. Angiosperms-G L Chopra, Pradeep Publications, Jalandhar, 144008.
8. Simpson, M.G. (2006). *Plant Systematics*. Elsevier Academic Press, San Diego, CA, U.S.A.
9. Singh, G. (2012). *Plant Systematics: Theory and Practice*. Oxford & IBH Pvt. Ltd., New Delhi. 3rd edition.
10. Jeffrey, C. (1982). An introduction to plant Taxonomy, Cambridge University Press, Cambridge.
11. Judd, W.S., Campbell, C.S., Kellogg, E.A., Steven, P.F. (2002). *Plant Systematics-A Phyllogenetic approach*. Sinauer Associates Inc., U.S.A. 2nd edition.

12. Maheshwari j.k. (1963). Flora of Delhi. CSIR, New Delhi.
13. Simpson, M.G. (2006). Plant Systematics. Elsevier Academic Press, San Diego, CA, U.S.A.
14. Singh, G. (2012). Plant Systematics: Theory and Practice. Oxford & IBH Pvt. Ltd., New Delhi. 3rd edition.
15. Gaikwad, S. P. & Garad, K. U. (2015). *Flora of Solapur District*, Laxmi Book Publication Solapur.

List of Practicals (based on paper no I to IV):

1. Study of dissecting and compound microscope.
 2. Electron micrographs/Models of viruses - T-Phage and TMV (photographs/models).
 3. Gram staining (demonstration) and forms of Bacteria (permanent slides/photographs).
 4. Identification of Algae (*Volvox*, *Sargassum*, *Gracillaria*,)
 5. Study of *Nostoc*.
 6. Study of *Spirogyra*.
 7. Identification of Fungi (*Albugo*, *Penicilium*, *Agaricus*,)
 8. Study of *Mucor*.
 9. Study of Yeast
 10. Identification of Archegoniates (*Marchantia*, *Adantium*, *Pinus*)
 11. Study of *Riccia*.
 12. Study of *Selaginella*- Morphology of sporophyte and anatomy of stem, Strobilus.
 13. Study of *Cycas*- Morphology of sporophyte and anatomy of leaflet.
 14. Study of *Cycas*- Reproductive structure: male cone, microsporophyll, microspore and megasporophyll, L. S. of ovule (permanent slide).
 15. - 18. Study of plant families:
 - a) Caesalpiniaceae
 - b) Solanaceae.
 - c) Nyctaginaceae
 - d) Liliaceae
 19. Study of soil P^H by Universal indicator/pH paper/pH meter.
 20. Study of Water holding capacity of different soil.
 21. Study of meteorological instruments (any three).
 22. Determination of Density and Frequency of plants by quadrat method.
 23. Ecological adaptations of Hydrophytes (*Hydrilla*, *Eichhornia* and *Typha*).
 24. Ecological adaptations of Xerophytes (*Nerium* and *Aloe*).
 25. Excursion report.
-

PUNYASHLOK AHILYADEVJI HOLKAR

SOLAPUR UNIVERSITY, SOLAPUR

Practicals of B.Sc. Part– I Botany (Semester System) (With effect from June 2019) Botanical Excursion: One teacher along with a batch not more than 20 students be taken for Botanical Excursion to places of Botanical interest, one in each term. If there are female students in a batch of twenty students, one additional lady teacher is permissible for excursion. T.A. and D.A. for teacher and non-teaching staff participating in excursions should be paid as per University rules. Tour report duly certified by teacher concerned and Head of the Department should be submitted at the time of practical examination. Practical Course: B.Sc. Part – I Botany practical course is to be covered in twenty five practicals. These practicals are to be performed by the students. Each practical is to be supplemented by permanent slides, preserved / fresh specimens, materials, charts, herbarium sheets, meteorological instruments where ever necessary.

Details of Practical Examination:

A) Every candidate must produce a certificate from Head of Department of his / her college, saying that he / she has completed practical course in satisfactory manner as per terms laid down by Academic council on the recommendations of Board of Studies in Botany. The student should record his / her observation and report of each experiment in the journal. The journal is to be signed periodically by teacher Incharge and certified by the Head of Department at the end of year. Candidates have to produce their certified journal and tour report at the time of practical examination. Candidate is not allowed to appear for the practical examination without a certified journal / loss certificate from Head of Botany Department regarding the same.

B) Practical Examination should be of five hours duration and shall test a candidate in the following respect. 1. Practical study of external and internal structures of different plant types and their classification. 2. Making temporary stained preparations and identification. 3. Identification and setting of biochemical experiments. 4. Study of plant families as per syllabus. 5. Spotting of the specimens as per syllabus.

1. Structure of the courses:-

A) Each paper of every subject for Arts, Social Sciences & Commerce Faculty shall be of 50 marks as resolved by the respective faculties and Academic Council.

B) For Science Faculty subjects each paper shall be of 100 marks and practical for every subject shall be of 100 Marks as resolved in the faculty and Academic Council.

C) For B. Pharmacy also the paper shall be of 50 marks for University examination. Internal marks will be given in the form of grades.

D) For courses which were in semester pattern will have their original distribution already of marks for each paper.

E) For the faculties of Education, Law, Engineering the course structure shall be as per the resolutions of the respective faculties and Academic Council.

2. Practical Examination for B. Sc. I. will be conducted at the end of second semester.

3. Examination fees for semester Examination will be decided in the Board of Examinations. The structures of all courses in all Faculties were approved and placed before the Academic Council. After considered deliberations and discussion it was decided not to convene a meeting of the Academic Council for the same matter as there is no deviation from any decision taken by Faculties and Academic Council. Nature of Question Paper approved by Hon. Vice Chancellor on behalf of the Academic Council.

**PUNYASHLOK AHALYADEVJI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR**

B.Sc. Part- I: Practical Examination in Botany

March/April 2020

Centre:

Batch:

Date:

Total Marks -80

- N. B.** 1. Draw neat and labeled diagrams wherever necessary.
2. Do not write about points of theoretical information unless asked specifically.
3. Perform the experiment as per instructions given by the examiners.
-

Q. 1. Identify and show the important structures observed by you in the given specimen- A, B and C. leave your preparation for inspection. (No written answer) **24**

Q. 2. Determine Density/Frequency of plants of given quadrat. **08**

Q. 3. Set up the ecological experiment- D assigned to you and shows it to the examiner (No Written answer). **08**

OR

Show the ecological adaptation in the given specimen- E (No written answer).

Q. 4. Assign the specimen- 'F' to its respective family on the basis of characters observed by you in it. Give important vegetative and floral characters. Draw the floral diagram/floral formula of it. **10**

Q. 5. Identifications **10**

a. Identify and describe the slide/photograph- **G** (*Viruses/ Gram staining/ Types of bacteria*).

b. Identify and describe- **H** (*Algae/Fungi*).

c. Identify and describe- **I** (*Bryophyte/Pteridophyte/Gymnosperm*).

d. Identify and describe- **J** (*Vegetative character/Reproductive character*).

e. Identify and describe the specimen- **K** (*Meteorological instrument*).

Q. 6. a. Journal **10**

b. Excursion report. **10**