

SHIVAJI UNIVERSITY, KOLHAPUR.



******* B+
Accredited By NAAC**

**Revised Syllabus For
Bachelor of Arts
(Part - III)**

**(Subject to the modifications to be made from time to time)
Syllabus to be implemented from June 2010 onwards.**

REVISED SYLLABUS FOR B.A. PART – III

(Introduced from June 2010 onwards)

B.A. (Part III)
(Introduced from June 2010 onwards)

- (i) Paper – IV
- (ii) Title of Paper – Geography of India
- (iii) Specific Objectives:-
- (iv) A brief note :- (On expected level of study from examination and assessment point of view):- -----

(v) UNIT No.of Lectures

Section – I

Physical Geography of India

Unit 1

Location and Physiography : (No.of Lectures – 15)

- i. Location of India : Absolute, Relative, Strategic
- ii. Physiographic divisions of India and their characteristics and importance

Unit 2

Climate (No.of Lectures – 15)

- i. Seasons in India and weather conditions associated with them : Summer, Rainy and Winter.
- ii. Mechanism of Indian Monsoon.
- iii. Distribution of rainfall in India.
- iv. Floods and droughts in India.

Unit 3

Drainage Pattern (No.of Lectures – 15)

- i. Drainage pattern in India.
- ii. Important rivers in India (Ganga, Brahmaputra, Narmada, Godavari, Krishna, Kavari).
- iii. Surface and ground water- distribution, utilization.
- iv. Concept of water shade development and conservation .

Unit 4

Soils and Natural Vegetation : (No.of Lectures – 15)

- i. Soils :
 - a) Types and distribution.
 - b) Soil degradation and conservation.
- ii. Natural Vegetation :
 - a) Types and distribution.
 - b) Importance, degradations and conservation of forests.

Section – II
Economic Geography of India

Unit 5

Resource in India

(No.of Lectures – 15)

- i. Mineral resources: Distribution and production of Iron ore, Bauxite and Manganese
- ii. Power resources : Distribution and production of Coal, Mineral oil, Natural gas.
- iii. Non-conventional resources : Solar and wind.

Unit 6

Agriculture

(No.of Lectures – 12)

- i. Importance of agriculture in Indian economy
- ii. Major crops : Rice, Wheat, Sugarcane, Cotton and Tea.
- iii. Green revolution and Agro climate regions of India.
- iv. Problems of Indian agriculture in the context of globalization.

Unit 7

Industries

(No.of Lectures – 20)

- i. Importance of industries in Indian economy.
- ii. Agro-based industries : Locational factors, distribution, production and trade of Sugar and Cotton Industries.
- iii. Mineral-based industries : Locational factors, distribution, production and trade of Iron and Steel, Aluminum Industries.
- iv. Fertilizers industry
- v. Automobile Industry

Unit 8

Transport and Trade

(No.of Lectures – 13)

- i. Roadways – Types of roads in India and their economy significance.
- ii. Railways – railway zones in India, Kolan railway.
- iii. Airways – Important airways and air ports in India and volumes of directions.
- iv. Indian trade – Major items of Export and Import, India's foreign trade.

(vi) Recommended Reading :
(In MLA/APA Style Sheet Format)

- a) **Basic Reading** :-
b) **Additional Reading** :-
c) **References** :-

1. Government of India. : The Gazetteer of India, Vol. I & II, Publication Division, New Delhi, 1965..
2. Despande, C.D.: India – A Regional Interpretation, Northern Book Centre, New Delhi, 1992.
3. Sharma, and Coutihno,.: Economic and Commercial Geography of India. Vikas Publishing House, India, 1998.
4. Memoria, C. B.: Geography of India, Shivrul Agrawal and Co., Agra, 1986.
5. Negi, B. S.: Economic and Commercial Geography of India, Kedar nath Ram nath, New Delhi.
6. Tirtha, Ranjit. : Geography of India, Rawat, Jaipur, 1996.
7. Tata McGraw Atlas: Socio Economic Atlas of India,
8. सार्वत प्रकाश ः भारताचा भूगोल, फडके प्रकाशन, कोल्हापूर, २००५
9. खतीब के .ए .ः भारताचा भूगोल, मेहता प्रकाशन, पुणे, २००५ .

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15. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:-
(Unit wise weight age of marks should also be mentioned)

Section I	Marks
Qus : 1) Objective Type Question (Multiple Choice)	05
Qus : 2) Short Note Type Question (Any three out of five)	15
Qus: 3) Description Type Question (Any two out of three)	20
Section II	
Qus : 4) Objective Type Question (Multiple Choice)	05
Qus : 5) Short Note Type Question (Any three out of five)	15
Qus: 6) Broad Ans. Type Question (Any two out of three)	20

- i) Paper – V
ii) Title of Paper – Economic and Urban Geography
iii) Unit

SECTION – I (Economic Geography)

Unit 1 **(No. of Lectures 10)**

Introduction of Economic Geography

- 1.1 Definitions & Meaning of Economic Geography
1.2 Scope of Economic Geography

1.3 Branches of Economic Geography

Unit 2

(No. of Lectures – 18)

2.1 Resources – concept & Types

2.2 Mineral Resources (World Production and distribution) Iron ore and Bauxite)

2.3 Power Resources (World production and distribution) Conventional – Coal & Petroleum Non Conventional) Wind and solar energy.

Unit 3

(No. of Lectures – 16)

Manufacturing Industries

3.1 Factors of Industrial Localization.

3.2 Weber's Theory of industrial Localization.

3.3 Cotton textile industry: U.S.A., U.K., Japan, China.

3.4 Iron & Steel industry: U.S.A., USSR, Japan, China.

3.5 Automobile Industry: U.S.A., U.K., Japan, Italy.

Unit 4

(No. of Lectures – 16)

Transportation & International Trade

4.1 Significance of Transport Routes

4.2 Major International Railways Ocean and Air Routes

4.3 Mass Communication – Computer Network Internet

4.4 International Trade – Bases and Nature.

4.5 Transport route policy and international trade policy of China & India.

Section – II (Urban Geography)

Unit 5

(No. of Lectures – 12)

Introduction to Urban Geography

5.1 Definitions and nature of urban Geography

5.2 Scope of Urban Geography

5.3 Characteristics of Urban Settlements

5.4 Factors of Urban Growth.

Unit 6

(No. of Lectures – 16)

Urbanization & Types of Urban Settlement

6.1 Trends of Urbanization in the world after II nd world war.

6.2 Central place theory of Christaller

6.3 Classification of urban settlements on the basis of size and functions.

6.4 Major urban problems

Unit 7

Site – Situation and Urban Morphology (No. of Lectures – 16)

7.1 Site – Significance & Types

7.2 Situation – Significance and Types.

7.3 Town structure and morphological models – The concentric zone theory, The sector – theory and the multi – nuclei theory

7.4 Urban regions – C.B.D., Residential and Manufacturing regions.

Unit 8

(No. of Lectures – 16)

Morphological Study And Urban Planning

8.1 Urban Planning – Bases and Process.

8.2 Morphological Study of New Delhi, Chandigarh, Mumbai, Kolkata & Kolhapur.

ECONOMIC GEOGRAPHY

References

1. Hartshome, T.N. and Alexander, J.W. (1994)
Economic Geography, prentice Hall, New Delhi.
2. H. Robinson (1978) : Economic Geography, Macdonaid & Evans.
3. Goh Chang & morgan, G.C. (1997)
Human and Economic Geography, oxford University Press.
4. Boesch H. (1964) : A Geography of world Econimy”
D. Van Nostrand co. New york.
5. Wheeler J.O. et.al (1995) : Economic Geography John wiely, New York.
6. Roborstson D (2001) : Globalization and Environment E. elgar CO.U.K.
7. Hamilton, I (1992) : Resources and Jndurtry, Oxford University Press New York.
8. White H.P. and senior M.L. (1983) Transport Geography, Longman, London.
9. खतीब के.ए. – आर्थिक भूगोल, अजब प्रकाशन, कोल्हापूर
10. धारपूरे विठ्ठल – आर्थिक भूगोल, पिंपळापुरे अॅण्ड कं, नागपूर
11. सवदी, कोळेकर – आधुनिक भूगोल, निराली प्रकाशन, पुणे.
12. सवदी कोळेकर (2008) – भूगोलाची मुलतत्त्वे, खंड दुसरा, निराली प्रकाशन

URBAN GEOGRAPHY

References

1. Mayer H.M. & Kohn C.F. (1967) : Reeding in Urban Geography, Chicago Printing Press.
2. Johnson J.H. (1967) : Urban Geography, An Introductory Analysis.
3. Northan : Urban Geography.
4. Bose A : India’s Urbanization 1974-2000, Tata Mc Graw Hill, New Delhi.
5. Carter H (1972) : The study of urban Geography, Edward Arnold, Londone.
6. Smailes A.E. : The Geography of Towns.
7. Taylor and Pntnam : Geography of Urban Places.
8. Hudson F : Settlement Geogrpahy
9. देशपांडे सी.डी. 1983 : शहरे – कॉन्टीनेंटल प्रकाशन, पुणे
10. सवदी, कोळेकर, 2005 : आधुनिक भूगोल निराली प्रकाशन, पुणे

11. खतीब के. ए. 2007 : वसाहती भूगोल, अजब प्रकाशन, कोल्हापूर
12. आडसूळ, पाटील व इतर : नागरी भूगोल, सप्रेम प्रकाशन, कोल्हापूर
13. धारपूरे विठ्ठल : वस्ती भूगोल, पिंपळापूरे अँड कं. नागपूर
14. क्षिरसागर, देशपांडे : अधिवास भूगोल
15. सवदी कोळेकर (2008) – भूगोलाची मुलतत्त्वे, खंड दुसरा, निराली प्रकाशन

**15. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:-
(Unit wise weight age of marks should also be mentioned)**

Section I	Marks
Qus : 1) Objective Type Question (Multiple Choice)	05
Qus : 2) Short Note Type Question (Any three out of five)	15
Qus: 3) Description Type Question (Any two out of three)	20
Section II	
Qus : 4) Objective Type Question (Multiple Choice)	05
Qus : 5) Short Note Type Question (Any three out of five)	15
Qus: 6) Broad Ans. Type Question (Any two out of three)	20

i) Paper – VI

DEVELOPMENT OF GEOGRAPHY AND APPLIED GEOGRAPHY

SECTION – I

(Development of Geography)

Unit 1 Ancient and medieval Geographical ideas: A brief review	12
1.1 Contribution of Greeks and Romans	
1.2 Ancient Indian Geographical Concepts.	
1.3 Arab Geographical thoughts	
Unit 2 Founders of modern Geographical Thoughts	12
a. Alexander Von Humboldt	
b. Carl Ritter	
Unit 3 Contributions of major school of geography	18
3.1 The German school of Geography Friedrich Ratzel	
3.2 The French School of Geography : Vidal – de – la – Blache	
3.3 The British School of Geography : Halford J. Mackinder	
3.4 The American School of Geography : W.M. Davis	
Unit 4 Dichotomies and Concepts in Geography	18

- 4.1 Physical Vs Human Geography
- 4.2 General Geography Vs. Regional Geography
- 4.3 Determinism Vs. Possibilism
- 4.4 Quantitative revolution in Geography causes and impacts.

SECTION II

(APPLIED GEOGRAPHY)

5 Applied Geography

5.1 Meaning of Applied Geography

5.2 Nature, Scope and Significance of Applied Geography

5.3 Applied Geomorphology

5.4 Applied Climatology

Unit 6 Issues related to physical Environment: Environmental degradation.

6.1 Environmental pollution – Air water and noise causes, effects and measures

6.2 Global environmental issues: Global warming green house effects, ozone layer deletion and acid rain.

Unit 7 Issues related to physical environment: environmental hazards and disasters

7.1 Environmental degradation and management of soil erosion and deforestation.

7.2 Causes, effects and measures of floods, droughts earthquakes, tsunami and land slides with reference of India.

Unit 8 Issue related to economy

8.1 Modern agriculture and associated problem.

8.2 Industrialization and associated problem

8.3 Spatial inequalities: Causes and consequences

8.4 Sustainable development with on man environment relationship.

References

- 1) Dohrs, F.E. and Sommers L.W. (ed) (1967) : Introduction to Geography Thomas y. crowell co.new york.
- 2) Hartshorne Richard (1959) Perspective on the nature of geography. Rand McNally and co Chicago
- 3) Harvey. David (1980) Explanation in Geography, Edward Arnold London.
- 4) Holt – Jensen A (1980) Geography: History and concepts longmans.
- 5) Husain Majid (1934) Evolution of Geographical Thought Jaipur, Rawat publication, Jaipur and new delhi.
- 6) James P.E. (1980) : All possible worlds : A History of Geographical ideas, Sachin publication, Jaipur (Indian reprint)
- 7) Johnston R.J. and Claval P (eds) (1984) : Geography since the second world war, Croom Helm London.
- 8) Griffith Taylor : Geography of Twentieth Century.
- 9) R.D. Dikshit : Geographical Thought.
- 10) Savindra Singh : Environmental Geography
- 11) H.M. Saxena : Environmental Geography
- 12) D.K. Asthana : Environment problems and solution.
- 13) Dhamja S.K. : environmental Problems and solution.
- 14) Chand and Puri : Regional planning in India
- 15) Sanstra SC (2001) Environmental science Kolkatta.

- 16) सवदी, कोळेकर – भौगोलिक विचार प्रणालीचा विकास
- 17) सवदी, कोळेकर – आधुनिक भूगोल स्पर्धा परीक्षा निराली प्रकाशन, पुणे
- 18) सवदी, कोळेकर जोशी (2006) पर्यावरणीय अध्ययन निराळी प्रकाशन पुणे.
- 19) अहिरराव व इतर – पर्यावरण विज्ञान पुणे
- 20) बेलापूरकर – भौगोलिक विचारधारा
- 21) मराठे – भौगोलिक संकल्पना

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15. NATURE OF QUESTION PAPER AND SCHEME OF MARKING:-
(Unit wise weight age of marks should also be mentioned)

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Qus : 5) Short Note Type Question (Any three out of five)	15
Qus: 6) Broad Ans. Type Question (Any two out of three)	20

B.A. Part -III
(Introduced from June 2010 onwards)

- (i) **Paper – VII**
- (ii) **Title of Paper - Map Work and Map Interpretation**
- (iii) **Specific Objectives:-**
- (iv) **A brief note :- (On expected level of study from examination and assessment point of view):- -----**

(v) UNIT	No.of Lectures	Marks
Unit 1		
Map Work		
1. Scales :	(No.of Lectures – 30)	10

- a. Meaning of scale ,Definition and methods of expression of scale – Verbal, Numerical / R.F. and Graphical
- b. Conversion of scale.
- c. Construction of graphical scale – simple, time and distance, diagonal

2. Map Projection : (No.of Lectures – 30) 10

- i. Definition, Classification of Projection based on : methods of construction, developable surface, position of viewpoint or light, tangent surface and qualities
- ii. Necessity and Choice of Map Projection
- iii. Graphical Construction, Properties and uses of the following projections :
 - a) Zenithal polar equidistance projection
 - b) Simple conical projection with one standard parallel
 - c) Cylindrical equal area projection
 - d) Marketers projection

Unit 3

Representation of Relief and Map Interpretation

(No.of Lectures 70) 20

- v. Methods of representation of relief
- vi. Representation of relief features and slope by contours
- vii. Determination of slope by gradient, degree, percent and mills.
- iv Simple profile / cross – section and Intervisibility
- v. Indexing of SOI Toposheets.
- Vi. Conventional Signs, Symbols and Colors used in SOI Toposheet
- Vii .Interpretation of SOI topographical map of plain, plateau and mountain areas with reference to the following points:
 - a) Marginal information
 - b) Information of physical environment: relief, drainage, natural vegetation.
 - c) Information of cultural environment: land use, transportation and communication, irrigation, settlements.

Unit 4

Study of Indian Weather Maps : (No.of Lectures – 50) 15

- i. Conventional Signs and Symbols used in IMD chart
- ii. Isobaric patterns: cyclone, depression, anticyclone, col, ridge, secondary depression, wedge etc.
- iii. Interpretation of Indian weather maps of summer, rainy and winter seasons with reference to the following points : day, date, time and season, pressure, wind, rainfall, cloud cover, other phenomena, sea conditions, temperature departure from normal etc.

Unit 5

Statistical Methods and Techniques: (No.of Lectures – 60) 20

- iii. Collection and forms of statistical data(Sources and Types of Data)

- iv. Analysis of statistical data by the following methods and techniques :
 - c) Central Tendency : Mean, Median and Mode
 - d) Dispersion : Mean deviation, Standard deviation, Co-efficient of variation
 - e) Correlation : Karl Pearson's Method
 - f) Analysis of Time Series : Semi-average Method

Unit 6

Cartographic Techniques : (No.of Lectures – 50) 15

- i. Cartographic methods and techniques
- ii. Representation of Statistical data by following methods
 - a) Graphs – Histogram, Hythergraph, Hythergraph Ergograph
 - b) Diagrams – Proportional Circle, Wind rose, Age and Sex Pyramid
 - c) Distributional maps – Dot maps, Choropleth, Isohyets, Isobars, Isotherms

Unit 7

Journal and viva voce 10

a) References :-

1. Bygoot, J. : An Introduction to Mapwork and Practical Geography. University Tutorial, London, 1964
2. Kanetkar, T.P. and Kulkarni S.V.: Surveying and Levelling (Part I & II.) A.V.G. Prakashan, Poona, 1965.
3. Monkose, F. J. and Wilkinson, H. R.: Maps and Diadgrams. Mathuen, London, 1971.
4. Raisz, E.: Principals of Cartography. McGraw Hill Book Com., Inc, New York 1962.
5. Robinson, A.H. and Sale, R. D.: Elements of Cartography. John Wiley and Sons, Inc, New York 1969
6. Sarkar, A.K. : Practical Geography : A Systematic Approach. Oriental Longman, Calcutta, 1997.
8. Singh, L.R. and Singh, R.: Mapwork and Practical Geography.Allahabad, 1973.
8. Gupta, C.B. : An Introduction to Statistical Methods, Vikas Publication House, New Delhi, 1978.
9. Ellhance, D.N. : Fundametals of Statistics, Kitab Mahal, Allahabad, 1972.
10. Singh, R.L. : Elements of Practical Geography, Kalyani Publishers, New Delhi.
11. Singh, R and Kanaujia, L.R.S. : Map Work and Practical Geography, Central Book Depot., Allahabad, 1970.
12. Mishra, R.P and Ramesh, A. : Fundamentals of Cartography. Concept Publ. Com., New Delhi, 2000.
13. Karlekar, S. and Kale, M. : Statistical analysis of Geographical data, Diamond Publications, Pune, 2006.

REVISED SYLLABUS FOR
B.A. (Part III)
 (Introduced from June 2010 onwards)

- (i) **Paper – VIII**
- (ii) **Title of Paper - Advanced Techniques of Spatial Analysis**
- (iii) **Specific Objectives:-**
- (iv) **A brief note :- (On expected level of study from examination and assessment point of view):-**

(v) **UNIT** **No.of Lectures** **Marks**

Unit 1
Introduction to Computer : **(No.of Lectures – 30)** **10**

- iii. Computers Fundamentals : Definition, Characteristics, Evolution, Structure, Hardware-software
- iv. Application of computer in Geography :
 Construction of Line graphs, Bar graphs, Pie diagram and scatter diagram
- v. Significance of Internet in Geographical studies.

Unit 2
Remote Sensing **(No. of Lectures – 45)** **20**

- i Concept of Remote Sensing.
- ii EMR Sensors and Platforms.
- iii Application of Remote Sensing in Geography.
- iv Aerial Photography: Types Aerial Photographs.
- v Determination of Photo Scale :
 - a-By establishing the relationship of photograph to ground .
 - b-By establishing the relationship of photo to ground distance with the help of map
 - c-By establishing the relationship between focal length and flying height.
- vi-Visual interpretation of aerial photography / imagery :
 Identification of physical and cultural features.

Unit 3
GIS and GPS **15**

1. GIS : **(No.of Lectures – 20)**

- v. i Concept of GIS.
- ii Component of GIS.
- I iii Data formats: Vector and Raster.
- iv Application of GIS in Geography.
- v Application of ELWIS

2. GPS : (No.of Lectures – 20)

- iv. Introduction to GPS.
- v. Application of GPS in Geography.
- vi. Determining latitude, longitude and altitude.

Unit 4

Surveying : (No.of Lectures – 50) 15

- v. Introduction to Surveying : meaning, divisions and types.
- vi. Preparation of plans of the given area with the following surveys :
 - g) Plane Table Survey : object and procedures of plane table survey
 - Radial method
 - Intersection method
 - Traverse method
 - h) Prismatic Compass Survey :
 - Whole circle and Reduced Bearings
 - Examples on conversion of bearings.
 - Local attraction and correction of bearings
 - Intersection and open traverse method.

Unit 5

Project Report based on field work 15

(Report on any one of the following themes)

- a) Flood affected village b) Earthquake affected village c) Landslide affected village d) problems of village / city such as kharland, air pollution, water pollution, noise pollution, water, electricity, slum housing, road, industry, health, education, city traffic, agricultural activities, land use, tourism or any other local area based problem
- (Period of field work maximum one week. Students have submitted report at the time of University Examination.)

Unit 6

Study Tour 15

(Anywhere in India for a period of Minimum 6 days and maximum 15 days)

Students have to submit study tour report at the time of University Examination.

Unit 7

Journal and Viva-voce 10

Note 1)Project work should be allotted batch should not more than 12 students
2) each department should have at least 2 Computers , 1 printer,1 scanner, 10 pairs of Aerial Photographs,10 Pocket Stereoscopes and 10 remote sensing Images .

(vi) Recommended Reading :

(In MLA/APA Style Sheet Format):-

a) References :-

- 1. Bygoot, J. : An Introduction to Mapwork and Practical Geography.
University Tutorial, London, 1964

2. Kanetkar, T.P. and Kulkarni S.V.: Surveying and Levelling (Part I & II.) A.V.G. Prakashan, Poona, 1965.
3. Monkose, F. J. and Wilkinson, H. R.: Maps and Diadgrams. Mathuen, London, 1971.
4. Raisz, E.: Principals of Cartography. McGraw Hill Book Com., Inc, New York 1962.
5. Robinson, A.H. and Sale, R. D.: Elements of Cartography. John Wiley and Sons, Inc, New York 1969
6. Sarkar, A.K. : Practical Geography : A Systematic Approach. Oriental Longman, Calcutta, 1997.
9. Singh, L.R. and Singh, R.: Mapwork and Practical Geography.Allahabad, 1973.
8. Curran, P. : Principles of Remote Sensing, Logman, London, 1989.
9. Dickinson, G.C. : Maps and Air Photographs, Arnold Publisher, New Delhi, 1979.
10. Singh, R.L. : Elements of Practical Geography, Kalyani Publishers, New Delhi.
11. Singh, R and Kanaujia L.R.S. : Map Work and Practical Geography, Central Book Depot., Allahabad, 1970.
12. Maguire, D.J. : Computers in Geography, Longman scientific and technical Publication, London, 1989.
- 13.Mathur, P.M. : Computer Application in Geography, John Wiley and Sons, New York, 1993.
14. Mishra, R.P and Ramesh A. : Fundamentals of Cartography. Concept Publ. Com., New Delhi, 2000.
15. Burrough, P. A. and McDonell, R. : Principles of Geographical Information Systems, Oxford University Press, Oxford, 1998.

(NOTE :

- i) The details of field work, seminar, Group Discussion and Oral examination be given wherever necessary.
- ii) General/Specific instructions for Laboratory safety should be given wherever necessary)

C] OTHER FEATURES :

1. INTAKE CAPACITY / NUMBER OF STUDENTS:-
(Wherever applicable)
1 Batch not more than 12 students
2. TEACHERS QUALIFICATIONS:-
 - As prescribed by norms .
 - However required number of core faculty should be given for particular course along with paper wise and Specialization wise work load allocation.
 - Work load details should be as per Apex body/UGC/State Govt./University norms.

3. The Board of studies should clearly mention the required Books, Journals and specific Equipments necessary for the Course.
SPECIFIC EQUIPMENTS : Necessary to run the Course.

Geographical Instruments List

B.A./ Special Geography

Geographical Instruments List

1. Wooden compass box 1
2. Meter scale (Wooden or plastic or steel)
3. Tracing table 1
4. Toposheet- (1:50,000) minimum 20
5. Weather map 20 (summer, winter, rainy season)
6. Thermograph 1
7. Aneroid barometer 1
8. Barograph 1
9. Wet & Dry bulb thermometer 1
10. Minimum & maximum Thermometer
11. cup anemometer 1
12. Rain Gauge 1
13. Pocket stereoscope 6
14. Mirror stereoscope 4
15. Aerial Photograph (10 black & 10 colour both)
16. Plane table survey (set)
17. Chain & tape survey (set)
18. Prismatic compass survey (set)
19. Imageries 10
20. Abeny level
21. Wall maps .District, State, National
22. Big Atlas 2 / School Atlas 6
23. Globe- Political Physical – 1 each
24. Out line – Tahsil, Maharashtra, India
25. Calculators -12
26. Camera 1
27. Magnifying Glasses – 1
28. Planimeter – 2
29. 3 Dimensional maps: State, India & World – 1 each
30. Wind vane 1
31. VCP & VCR – Laptop CDP
32. Video – cassettes/ C.D./D.V.D of: Volcano, Earth quakes, Urbnisations
33. Over-head projecto/LCD – 1
34. Computer –2, Printer – 1, Scanner – 1
35. Uno Bropel pen set
36. Hatching Machine - 1
37. Lettering set – 1
38. Slide projector – 1
39. Drafting Machine
40. ILWIS software

1. Laboratory

Size 30 X 20'

2. Lab Assistant – 1

3. Peon – 1

At least one journal from the following .

1. The Deccan Geographer, Pune.
2. I I G Transactions, Pune
3. Geographical Review of India, Calcutta
4. National Geographer Journal , Varanasi
5. National Geographic , Washington D.C.
6. NAGI – Annals
7. Journal of Regional Science: Kolkatta.
8. Indian Geographers , Chennai.
9. Bhugol Sanshodan Patrika.
10. Goa Geographar
11. Research Link
12. Enrich Environment
13. Shodh Samiksha Aur Mulyankan

16. EQUIVALENCE IN ACCORDANCE WITH TITLES AND CONTENTS OF PAPERS- (FOR REVISED SYLLABUS)

Sr.No.	Title of Old Paper	Title of New Paper
1.	Economic Geography (paper IV.)	Economic and Urban Geography. (paper V.)
2.	Settlement Geography (Paper No. V)	Geography of India (Paper No.IV)
3.	Development of Geography and Applied Geography. Paper No. VI (old)	Development of Geography and Applied Geography Paper No. VI (Revised)
4.	Map Work, Statistical Methods and G.I.S. (Paper No. VII)	Map Work and Map Interpretation(Paper No. VII)
5.	SOI Toposheet, Surveying, Remote Sensing and Field Work (Paper No. VIII)	Advanced Techniques of Spatial Analysis (Paper No. VIII)