



RANI CHANNAMMA UNIVERSIT BELAGAVI

WEL-COME

**TO THE COURSE STRUCTRE AND SYLLABUS OF UNDERGRADU
PROGRAMMES – B.Sc**

III Semester



Group – II

OPTIONAL / COMPULSORY SUBJECT FOR THE DEGREE IN SCIENCE SUBJECT

Science Subjects: (any three subject of equal importance to be chosen as per the grouping given by Rani Channamma University, Belagavi)

DETAILED SYLLABUS OF FOLLOWING PAPERS WITH PRACTICAL

1. BOTANY (optional)

B.Sc. III Semester (w.e.f: 2018 – 19) and onwards.

Subject: BOTANY (optional)

Paper-: Diversity of Cryptogams (Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms).

Unit I: Algae

General characters, Pigmentation, Classification by Fritsch (up to class level). Distribution, thallus structure, reproduction and life cycle of Nostoc, Volvox, Oedogonium, Sargassum and Batrachosperm. Economic importance.

Unit II: Fungi

General characters, Classification (Alexopoulos's system). Distribution, Structure, Reproduction and life cycle of Albugo, Rhizopus, Penicillium and Puccinia. Economic importance of fungi. General account of lichens.

Unit III: Plant Pathology

General account of Bacteria and Viruses. Introduction and general symptoms of plant diseases. Symptoms, Pathogens and control measures of Late blight of potato, White rust of crucifers, Tikka disease of ground nut.

Unit IV: Bryophytes

General characters, Classification (Smith). Structure, reproduction and schematic life cycle of Riccia, Anthoceros and Funaria. (Developmental details are not expected). Evolution of sporophytes.

Unit V: Pteridophytes

General characters and classification. Distribution, Structure (External and Internal) and Reproduction of Psilotum, Selaginella, Equisetum and Nephrolepis (Developmental details are not expected). Stelar evolution. Heterospory and seed habit

Unit VI: Gymnosperms

General characters and classification. Distribution, Structure (External and Internal) and Reproduction of Cycas, Pinus and Gnetum (Developmental details are not expected).

Unit VII: Paleobotany

Geological time scale, fossilization-molds, Impression, Petrification and cast. Study of fossils - Calamitis, Lepidodendron, Lygenopteris.



B.Sc. III Semester PRACTICALS

Total number of hours per week: 04, Internal Assessment=10 Marks, Max Marks: 40 M

1. Vegetative and reproductive structures of Nostoc, Volvox and Oedogonium.
2. Vegetative and reproductive structures of Sargassum and Batrachospermum
3. Vegetative, reproductive structures and disease symptoms of Albugo, Rhizopus, Penicillium.
4. Vegetative, reproductive structures and disease symptoms of Puccinia. Lichen
5. Study of Vegetative and Reproductive structures of Riccia, Anthoceros and Funaria
6. Study of Vegetative and Reproductive structures of Psilotum and Selaginella.
7. Study of Vegetative and Reproductive structures of Equisetum and Nephrolepis
8. Study of Vegetative and Reproductive structures of Cycas, Pinus and Gnetum
9. Disease symptoms and control measures of Late blight of potato, Black rust of wheat, Tikka disease of ground nut.
10. Paleobotany- Study of fossils Lepidodendron, Calamites, Lygenopteris.

11. Field visits.

Suggested Readings:

Smith G.M.1971 vol 1 Algae and fungi. Tata McGraw HILL Publishing company New Delhi

Sharma O.P. 1992 Text book of thallophytes McGraw Hill Publication

Sharma P.D. 1991 The fungi Rastogi and Co Meerut

Dubey H.C.1990An Introduction to Fungi Vikas Publishing House Pvt Ltd

Dehli Clifton, A 1958 Introduction to Bacteria McGraw Hill and Co New York

Basu A.N.1993 Essentials of plant viruses, vectors plant diseases New Age International New Delhi.

Chopra G.L. A text book of algae Rastogi and co Meerut

Rangaswami G 1998 Diseases of crop plants in India. Prentice Hall of India New Delhi.

Sunderrajan S 1997 College Botany Vol 1. S. Chand and Co Ltd New Dehli

Alexopoulos, 1992 An Introduction to Mycology. New Age International. New Dehli

Vashista B.R. 1978 Fungi. S. Chand and co. Ltd. New Delhi

B.Sc. III Semester

Botany Practical Examination

Time: 4 Hours

Max M

- | | |
|--|----|
| Q1: Identify and classify specimens A, B, C giving reasons. | 09 |
| Q2: Identify and explain the internal structures of specimen D and E with the neat labelled diagrams
(Show the preparation to the examiner) | 10 |
| Q 3: Identify & describe the salient features in the slides/ specimens E, F, G, H, I and J | 12 |
| Q4: Identify & describe the salient features in the fossil specimen K. | 03 |
| Journal | 04 |
| Field visit report | 03 |



First Semester B.Sc. (Botany)

Paper Code: BOTDSCT1.1

Paper Title: Biodiversity (Microbes, Algae, Fungi and Archegoniate)

Teaching Hours: 4 Hrs / Week

Marks: Th-80+IA-20

Total hours: 60

Credits: 3

Unit1:

- **Viruses** : Discovery, general structure, replication (general account), DNA virus (T-phage); Lytic and lysogenic cycle, RNA virus (TMV); Economic importance;
- **Bacteria**: Discovery, General characteristics and cell structure; Reproduction – vegetative, asexual and recombination (conjugation, transformation and transduction); Economic importance.
- **Viral Plant Diseases**: TMV. Vein clearing, Dwarfing, Yellowing and BBTV disease.
- **Bacterial Plant Disease**: Citrus canker, Bacterial blight and Crown gall disease.

15 hours

Unit2:

- **Algae**: General characteristics; Ecology and distribution; Range of thallus organization and reproduction; Classification of algae by smith; Morphology and life-cycles of the following: *Nostoc*, *Oedogonium*, *Vaucheria*, *Volvox*, *Ectocarpus* & *Batrachospermum*. Economic importance of algae.
- **Fungi**: Introduction- General characteristics, ecology and significance, range of thallus organization, cell wall composition, nutrition, reproduction and classification; True Fungi- General characteristics, ecology and significance, life cycle of *Rhizopus* (Zygomycota), *Penicillium* (Ascomycota), *cercospora* (Deutoromycota), *Puccinia*, *Agaricus* (Basidiomycota);
- **Fungal Diseases**: Late blight of potato, White rust of *Albugo candida.*, Black rust of *Puccinia*, Powdery mildew and Early Blight of Tomato.
 - **Symbiotic Associations-Lichens**: General account, reproduction and significance;
- **Mycorrhiza**: ectomycorrhiza and endomycorrhiza and their significance

15 hours.

Unit 3:

- **Introduction to Archegoniate**: Unifying features of archegoniate, Transition to land habit, Alternation of generations.
- **Bryophytes**: General characteristics, adaptations to land habit, Classification, Range of thallus organization. Classification (up to family), morphology, anatomy and reproduction of *Riccia*, *Marchantia*, *Anthoceros* and *Funaria* (Developmental details not to be included). Ecology and economic importance of bryophytes with special mention of *Sphagnum*.

15 hours

Unit 4:

- **Pteridophytes**: General characteristics, classification, Early land plants (*lepidodendron*, *Lepidocarpon*, *Calamites*). Classification (up family), morphology, anatomy and reproduction of *Selaginella*, *Equisetum* and *Pteris*. (Developmental details not to be included). Heterospory and seed habit, stelar evolution. Ecological and economical importance of Pteridophytes.
- **Gymnosperms**: General characteristics, classification. Classification (up to family), morphology, anatomy and reproduction of *Cycas*, *Gnetum* and *Pinus*. (Developmental details not to be included). Ecological and economical importance.

15 hours



Practical

Paper Code: BOTDSCTP1.1 **Paper Title:** Biodiversity (Microbes, Algae, Fungi and Archegoniate)
Teaching Hours: 3 Hrs / Week

Marks: Th-40+IA-10

Credits: 1

1. EMs/Models of viruses – T-Phage and TMV, Line drawing/Photograph of Lytic and Lysogenic Cycle.
2. Types of Bacteria from temporary/permanent slides/photographs; EM bacterium; Binary Fission; Conjugation; Structure of root nodule.
3. Gram staining
4. Study of vegetative and reproductive structures of *Volvox*, *Nostoc*, (electron micrographs), *Oedogonium*, *Vaucheria*, *Ectocarpus* and *Batrachospermum* through temporary preparations and permanent slides.
5. *Rhizopus* and *Penicillium*: Asexual stage from temporary mounts and sexual structures through permanent slides.
6. *Cercospora Specimens*/photographs and tease mounts.
7. *Puccinia*: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; section/tease mounts of spores on Wheat and permanent slides of both the hosts.
8. *Agaricus*: Specimens of button stage and full grown mushroom; Sectioning of gills of *Agaricus*.
9. Lichens: Study of growth forms of lichens (crustose, foliose and fruticose)
10. Mycorrhiza: ectomycorrhiza and endomycorrhiza (Photographs)
11. *Marchantia*-morphology of thallus, w.m. rhizoids and scales, v.s. thallus through gemma cup, w.m. gemmae (all temporary slides), v.s. antheridiophore, archegoniophore, L.S. sporophyte (all permanent slides).
12. *Funaria*- morphology, w.m. leaf, rhizoids, operculum, peristome, annulus, spores (temporary slides); permanent slides showing antheridial and archegonial heads, L. S. capsule and protonema.
13. *Selaginella*- morphology, w.m. leaf with ligule, T.S. stem, w.m. strobilus, w.m. microsporophyll and megasporophyll (temporary slides), L.S. strobilus (permanent slide).
14. *Equisetum*- morphology, T.S. internode, L.S. strobilus, T.S. strobilus, w.m. sporangiophore, w.m. spores (wet and dry) (temporary slides); T.s rhizome (permanent slide).
15. *Pteris*- morphology, T.S. rachis, v.s. sporophyll, w.m. sporangium, w.m. spores (temporary slides), T.S. rhizome, w.m. prothallus with sex organs and young sporophyte (permanent slide).
16. *Cycas*-morphology (coralloid roots, bulbil, leaf), T.S. coralloid root, T.S. rachis, v.s. leaflet, v.s. microsporophyll, w.m. spores (temporary slides), L.S. ovule, T.S. root (permanent slide).
17. *Pinus*- morphology (long and dwarf shoots, w.m. dwarf shoot, male and female), w.m. dwarf shoot, T.S. needle, T.S. stem, L.S./T.S. male cone, w.m. microsporophyll, w.m. microspores (temporary slides), L.S. female cone, T. L.S. & R. L.S. stem (permanent slide).
18. Study tour two days compulsory.



Second Semester B.Sc. (Botany)

Paper Code: BOTDSCT2.1
Teaching Hours: 4 Hrs / Week
Teaching hours: 60

Paper Title: Plant Ecology and Diversity of angiosperms
Marks: Th-80+IA-20
Credits: 3

Unit1:

- **Atmosphere:** Atmosphere gaseous composition and Atmospheric layers.
- **Ecological factors:** Soil, weathering, composition, pedogenesis and soil profile. Water: States of water in the environment, precipitation types. Light and temperature: Variation Optimal and limiting factors; Shelford law of tolerance. Adaptation of hydrophytes and xerophytes.

15 hours

Unit 2:

- **Plant Succession:** Characters; Ecotone and edge effect; Succession; Hydrosere and Xerosere.
- **Ecosystem:** Structure; energy flow trophic organisation; Food chains and food webs, Ecological pyramids production and productivity; Biogeochemical cycles; carbon, nitrogen and Phosphorous cycles.
- **Phytogeography:** Principle, biogeographical zones; Endemism.

15 hours

Unit3

- **Morphology of Angiosperms:** Root, Stem, leaf and its modifications: inflorescence, flower and fruit.

15 hours

Unit4:

- **Plant Taxonomy:** Introduction, Identification Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access
- **Classification**
Types of classification-artificial, natural and phylogenetic. Bentham and Hooker (upto series), Engler and Prantl (upto series).
- **Taxonomic hierarchy**
Ranks, categories and taxonomic groups, Taxonomic evidences from palynology, cytology, phytochemistry and molecular data.
- **Botanical nomenclature**
Principles and rules (ICN); ranks and names; binominal system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations.

15 hours



Practical

Paper Code: BOTDSCP2.1
Teaching Hours: 3 Hrs / Week

Paper Title: Plant Ecology and Diversity of angiosperms
Marks: Th-40+IA-10
Credits: 1

1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer /hygrometer, rain gauge and lux meter.
2. Determination of pH, and analysis of two fertile soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency by rapid field test.
3. (a) Study of morphological adaptations of hydrophytes (Submerged, Free floating, Amphibious and Rooted floating) and xerophytes (succulent and non succulent).
(b) Study of biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (Orobanche), Epiphytes, Predation (Insectivorous plants)
4. Morphology of Angiosperms: Root, Stem, leaf and its modifications: Inflorescence, Flower and Fruit.
5. Study of vegetative and floral characters of the following families (Description, V.S. flower, section of ovary, floral diagram/s, floral formula/e and systematic position according to Bentham & Hooker's system of classification): Polypetalae: Magnoliaceae, Malvaceae, Rutaceae, Brassicaceae. Gamopetalae- Rubiaceae, Asteraceae, Apocynaceae, Asclepiadaceae. Apetalae-Euphorbiaceae. Monocot- Poaceae
6. Mounting of a properly dried and pressed specimen of any wild plant with herbarium Label (Herbarium any 10 to be submitted in the record book).
7. Study tour for minimum 3 days compulsory.

Suggested Readings

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. Simpson, M.G. (2006). *Plant Systematics*. Elsevier Academic Press, San Diego, CA, U.S.A.
4. Singh, G. (2012). *Plant Systematics: Theory and Practice*. Oxford & IBH Pvt. Ltd., New Delhi. 3rd edition.



Group – II

OPTIONAL / COMPULSORY SUBJECT FOR THE DEGREE IN SCIENCE SUBJECTS

RANI CHANNAMMA UNIVERSITY, BELAGAVI.

B.Sc. IV Semester (w.e.f: 2018 – 19) and onwards.

Subject: BOTANY (optional)

Paper: Diversity of Angiosperms and their systematics, Economic botany and Medicinal botany 52 hrs.

Unit I: Morphology of Angiosperms: 07 hrs.

Study of stems and its modifications, Leaf- types, stipules, Phyllotaxy and their modifications. Study of Inflorescences, flowers (Floral formula and Floral diagram to be included) and fruits.

Unit II: Angiosperm systematics: 10 hrs.

Botanical nomenclature- principles and rules, taxonomic ranks, type concept and principle of priority. Botanical survey of India. Classification of Angiosperms: Systems proposed by Bentham and Hooker, Engler Prantl. Their salient features, merits and demerits. Brief account of APG classification.

Contributions of Cytology (Cytotaxonomy), Phytochemistry (Chemotaxonomy) and Taximetrics (Numerical taxonomy) to taxonomy.

Unit III: Diversity of flowering plants as illustrated by members of the following families: 20hrs

Annonaceae, Brassicaceae, Malvaceae, Rutaceae, Rhamnaceae, Fabaceae, Myrtaceae, Combretaceae, Cucurbitaceae, Apiceae, Rubiaceae, Asteraceae, Apocyanaceae, Asclepiadaceae, Convolvulaceae, Solanaceae, Acanthaceae, Verbenaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae, Arecaceae and Poaceae.

Unit IV: Economic Botany: 10 hrs

Origin & Distribution, Family, Botanical name and utility of following plants-

Food plants: Rice, Wheat, Maize, Pulses (Bengal gram, Pigeon pea) and Sugarcane

Fibres: Cotton, Jute.

Oil yielding plants: Ground nut, Sunflower, Palm oil, Sandalwood and Citronella oils

Paper & pulp: Bamboo & Eucalyptus

Spices: Ginger, Clove, Cinnamon, Asafoetida and Cardamom

Beverages: Tea & Coffee

Rubber: Hevea sp.

Unit V: Medicinal botany: 05hrs

Common medicinal plants in primary health care: -

Tippateega (*Tinosporacordifolia*), Tulsi (*Oscimumsanctum*) Kalabanda (*Aloe-vera*)

Turmeric (*Curcuma longa*) Ashwagandha (*Withaniasomnifera*) and Sarpagandha

(*Rauwolfiaserpentina*)



Practicals:-

1. Morphology of Root, Stem, Leaf and their modifications.
2. Study of Inflorescence and its types.
3. Study of Flower-I- Descriptive terms, Thalamus, Calyx, Corolla and Aestivation.
4. Study of Flower-II –Androecium and Gynoecium. Floral formula and Floral diagram.
5. Study of Fruit types.
6. Study of any 18 families representing from polypetalae, gamopetalae, apatalae and monocots available in the locality.
8. Economic botany and Study of Medicinal Plants (as per syllabus) available in the locality.
9. Study Tour for minimum Two days to study the Flora (Taxonomy).

Suggested readings:

1. Davis, P.H. and Heywood, V.H. 1963. Principles of angiosperm taxonomy. Oliver and boyd, London.
2. Heywood, V.H. and moore, D.M. (EDS) 1984. Current concepts in plant taxonomy academic press, London
3. Jeffery, C. 1982. An introduction to plant taxonomy. Cambridge university press, cambridge, London.
4. Jones, S.B. Jr and Luchsinger, A.E. 1986. Plant systematics (2nd edition). McGraw Hill book co, newyork.
5. Radford, A.E. 1986. Fundamentals of plant systematics. Harper and Row, newyork.
6. Singh, G. 1999. Plant systematics; theory and practice. Oxford and IBH, newdelhi.
7. Atace, C.A. 1989. Plant taxonomy and bio systematics (2nd edition). Edward Arnold, London.
8. Dutta, S.C. 1988. systematic botany. walleyeastern, newdelhi.
9. Jaques, H.E. 1999, Plant families- how to know them. IBS, newdelhi.
10. Lawrence, G.H.M. 1951. Taxonomy of vascular plants. Macmillan, newdelhi.
11. Stewart, W.M. 1983. Paleobotany and the evolution of plants, cambridge university press, cambridge.
12. Joshi S.G. medicinal plants oxford and IBH newdelhi.
13. Kokate and Gokeale _pharmacognacy. Neralipublication, newdelhi.
14. Lad v Ayurveda- the science of self-healing- motilalbanarasidas, newdelhi.
15. Lewis W.H. and M.P, F Elwin Lewis 1976, medical Botony plants affecting maris health. A wileyinterscience publication, Jhonwiley and sons newyork.
16. College botany vol 1 by Gangulee, Das and Datta. New central book agency, Calcutta.
17. Systematic botany by R.N Sutaria.
18. Taxonomy of Angiosperms by B.P. Pandey.
19. Kocchar, S.L. 1998. Economic Botany in Tropics. 2nd edition, Macmillian Ltd, New Delhi .
20. Sambamurthy, A.V.S.S and subramanyam, N.S. 1989. A Text Book of Economic Botany, Wiley Eastern Ltd. New Delhi .
21. Sharma, O.P. 1996. Hill's Economic Botany. Tata McGraw Hill Co., Ltd., New Delhi.
22. Simpson, B.B. and Conner-Ogorzaly, M. 1986. Economic Botany-plants in our world. McGraw Hill, New York.
23. Hill. A.F. 1989. Economic Botany. Tata McGraw-Hill, New York.
24. Herbs Cultivation and Medicinal Uses- H. Panda – NIIR Publication, New Delhi.
25. Chopra R.N., Badhuvar R.L. & Ghosh G. (1965) - Poisons Plant of India.



B.Sc. V Semester (w.e.f. 2019 – 20)

Botany Paper - I

50

Paper-I: Plant Breeding, Tissue Culture and Horticultural Practices.

Hrs

Unit I: Plant Breeding: History and objectives. Introduction, Selection (Pure line, Mass Selection), Hybridization- inter specific and inter generic. Mutational & Polyploidy breeding. Germ plasm and its maintenance. Pollen Bank, Quarantine method.

10 Hrs.

Unit II: Plant Tissue Culture: Scope and Significance. Basic Aspects and Cellular totipotency (Shoot tip, Embryo and Haploid culture techniques). Differentiation and morphogenesis.

10 Hrs.

Unit III: Introduction to Horticulture, Nursery management and importance.

Methods of propagation – vegetative – rhizome, bulb, corm and sucker (natural). Artificial- Cutting, layering, grafting and budding. Bonsai – methods and importance. Nursery management: Introduction, types of nurseries and cultural practices. Seed (propagule) collection, storage and treatment. Manures, fertilizers and pesticides. Methods of irrigation – drip, sprinkler and flood

12 Hrs.

Unit IV: Green House Technology – Introduction, advantages and limitations. Types of Green Houses- Green House structure, principle Greenhouse technology as applied to ornamental, vegetable and fruit plants.

08 Hrs.

Unit V: Harvest Technology and Weed Management: Harvest Technology: Flower and fruit plants management. Artificial ripening, maturity indices, methods of picking. Post-harvest technology and management of fruits: grading, processing, storage and packing. Weed Management: Introduction and significance. Invasive weeds – concept and causes of their dominance. Weed control – physical, chemical and biological methods.

10 Hrs.

Practicals:

1. Study of methods of propagation with help of tubers, bulbs rhizomes, corms suckers, runner and offset.
2. Study of propagation by cutting, layering, grafting and budding.
3. Methods of emasculation and bagging for cross-pollination.
4. Morphology and anatomy of dry and wet stigma.
5. Morphology and anatomy of solid and hollow styles.
6. Study of pollination types.
7. Demonstration of tissue culture techniques.
8. Visit to nursery - poly house /Green house and tissue culture lab.
9. Preparation of MS media for culture. 10. Bonsai techniques.



Semester V
(w.e.f 2016-17)
Botany Paper – II

Paper-II: Ecology, Environmental Biology and Phytogeography **50 hrs**

Objectives:- This paper has topics on pollution, pollution control and forestry. Considering the present scenario with respect to environment these topics are most valuable.

Unit 1: Plant and environment: Atmosphere (gaseous composition), water (properties of water cycle), light (global radiation, photo synthetically active radiation), temperature, soil (development, soil profiles, physico-chemical properties), and biota.

Morphological, anatomical and physiological responses of plants to water (hydrophytes, xerophytes and epiphytes), temperature (thermoperiodicity and vernalization), light (photoperiodism, heliophytes and sciophytes) and salinity.

12 Hrs.

Unit 2: Population ecology and Ecosystems: Growth curves; ecotypes; ecads, Ecological succession-hydrach and xerarch. Structure of Ecosystems (Pond and Forest): abiotic and biotic components; food chain, food web, ecological pyramids, energy flow.

10 Hrs.

Unit 3: Phytogeography: Botanical regions of world, Vegetation types of Karnataka and India.

06 Hrs.

Unit 4: Conservation of Natural resources: Different types of natural resources and their conservation,

Forest and Forest Management: Forest and its ecological significance, deforestation, forest management and social forestry. Natural depletion of vegetation endangered and threatened economic plants of India and red data book. Wild life management in India, Indian board of wild life, national park and sanctuary.



Energy resources: conventional and non conventional sources of energy.

Biodiversity: significance, types, depletion, conservation of biodiversity.

12 Hrs.

Unit 5: Pollution: Introduction, causes, effects and control measures of Water pollution, Air pollution, Soil pollution, Acid rain, Global warming, and Ozone depletion.

Sewage water and waste water types. Methods of effluent treatment of industrial waste water, sludge disposal and its care related to environment.

10 Hrs.

Practical:

1. Study of frequency and density of herbaceous plants by quadrat method.
2. To determine moisture content and water holding capacity of different types of soils.
3. To estimate the alkalinity of water samples.
4. Ecological instruments.
5. Morphology and anatomical adaptations in three hydrophytes.
6. Morphology and anatomical adaptations in xerophytes: One succulent and one non-succulent, one epiphyte and one halophyte.
7. Waste water analysis, physical chemical parameter, pH, turbidity, TDS, BOD, COD, temperature and any other inorganic elements.
8. Visit to effluent treatment plant to study recycling of waste water near by industry and study the effect of industrial pollution nearby water bodies (Biomagnification & Eutrophication).
9. Assignment of Project related to practical number eight.



10. Study Tour of minimum two days to study forest types and ecological groups.

Books for Reference:

1. Sharma P.O. (1993)-Ecology and Environment – Rastogi Publication, New Delhi.
2. Mishra R. - Ecology Work Book- Oxford and IBH, New Delhi.
3. Agarwal K.C. (1993)- Environmental Biology- Agro Botanical Publishers, Jodhapur.
4. Mishra K.C. (1992)- Manual of Plant Ecology – Oxford & IBH Publication, New delhi.
5. Kochar P.L. (1980) – Plant Ecology – S. Nagin & Co., Jalandhar.
6. Kormandi E.J. (1984)- concept of Ecology- Printice Hall Ind., New Delhi.
7. Asthana R.K. (1998) – Environmental Problems and Solution- S.Chand & Co. Pvt, Ltd., New Delhi.
8. Verma P.S., V.K. Agarwal (1983) – Environmental Biology - S.Chand & Co. Pvt. Ltd., New Delhi.
9. Subramanyam N.S. A.V.S.S. Samburthy (2000)- Ecology- Narosa Publishing House, New Delhi.
10. Sharma O.P. (1993) – Ecology & Environmental Biology- Rastogi Publication, Meerut.
11. Nebel B.J. (1990) – Environmental Science – Printice Hall Indu. Pvt. Ltd. New Delhi.
12. Trivedi R.K. Etal (1987) – Practical Ecology – Anmol Publication, Jodhapur.
13. Rao K.S. (1971) - Fundamentals of Ecology – W.B. Saunders co. Philadelphia.
14. Shukla R.S. & Chandel P.S. (2000) – Plant Ecology – S.Chand & Co. Pvt. Ltd., New delhi.
15. Odum, E.P 1983. Basic Ecology, Saunders, Philadelphia.



D. III Descriptive Answers

21. From Unit 1: Cell Biology: OI sub question. 1 X 10 = 10
OR
From Unit 2: Morphology of Chromosomes-OI sub question.
22. From Unit 3: Cell division: OI sub question. 1 X 10 = 10
OR
From Unit 4: Genetics: OI sub question.
23. From Unit 4: Genetics: OI sub questions. 1 X 10 = 10
OR
From Unit 5: Evolution: OI sub question.

B.Sc VI semester

(w.e.f 2016 -17)

Botany paper -II

(Molecular Biology, Biotechnology & Immunology)

50 hrs

Objectives: - Molecular Biology, Biotechnology and Immunology has some recent trends in the concern fields. This will help students to pursue research in concerned fields.

Unit 1: Nucleic Acids: DNA & RNA, occurrence, types and chemical compositions.

Experimental evidences for DNA as genetic material. Structure of DNA, Replication, semiconservative method, RNA and types, post transcription changes.

10 Hrs.

Unit 2: Gene Expression: Gene concept, Genetic code & protein synthesis. Regulation of gene expression in prokaryotes & eukaryotes.

08Hrs.

Unit 3: Recombinant DNA technology and Bioinformatics:

Enzyme, vector (plasmid PBR 322), marker gene, Steps of cloning technique, PCR and its application, Genomic DNA and cDNA library. Brief concept on Genomics and proteomics.

08 Hrs.

Unit 4: Biotechnology and Genetic engineering of plants:

Basic concepts, principles and scope. Aims, strategies for development of transgenic plants (with suitable example). Agrobacterium-The natural genetic engineer. T-DNA and transposon mediated Gene tagging, intellectual Property rights, possible ecological risks and ethical concerns.

12Hrs.

Unit 5: Microbial genetic manipulation and Immunology:

Microbial genetic manipulation: Bacterial transformation, selection of recombinant and transformants, genetic improvement of industrial microbes, nitrogen fixers & fermentation technology.

Immunology: Immuno-systems, Immunotechniques in Agriculture, ELISA method to detect Plant diseases & Monoclonal antibodies.

12 Hrs.

Practicals:

1. DNA estimation by DPA diphenyl amine method.
2. RNA estimation by orcinol method.
3. Extraction and estimation of protein from plant source.
1) Salt precipitation method 2) solvent method
4. Culturing of Rhizobium-YEMA media.
5. Culturing of Azotobacteria-ASHBYS media.
6. Demonstration of Electrophoresis technique
7. Agarose gel electrophoresis.
8. Demonstration and comparison of GM Plants with Non GM Plants (BT- Cotton, BT-Brinjal, BT Tomato).
9. Visit to Biotechnology Research Laboratory.

RANI CHANNAMMA UNIVERSITY, BELAGAVI.

Department of Post Graduate Studies and Research in Commerce



Syllabus of Master of Commerce

(With effect from Academic Year 2017-18)

IV Semester



M.Com Course Structure

Sem	Paper Code	Course	IA Marks	Sem End Marks	Total	Hrs/Week	Credits	
III	3.1	Business Research Methods	20	80	100	04	04	
	3.2	International Financial Management	20	80	100	04	04	
	Group- A : Accounting and Finance							
	3.3 A	Financial Markets and Institutions	20	80	100	04	04	
	3.4 A	Corporate Accounting	20	80	100	04	04	
	3.5 A	Accounting for Specialised Institutions	20	80	100	04	04	
	Group- B: Cost Accounting							
	3.3 B	Production and Operation Management	20	80	100	04	04	
	3.4 B	Cost Management	20	80	100	04	04	
	3.5 B	Cost Accounting Standards	20	80	100	04	04	
	Group - C: Banking							
	3.3 C	Bank Marketing	20	80	100	04	04	
	3.4 C	Banking in India	20	80	100	04	04	
	3.5 C	Management Accounting for Bankers	20	80	100	04	04	
	Open Elective Course							
	3.6	To be chosen from the other Department	20	80	100	04	04	
		Open Elective Course meant for other Departments - Personal Financial Planning	20	80	100	04	04	
		Total Marks/Credits	120	480	600	24	24	
	IV	4.1	E-Commerce	20	80	100	04	04
		4.2	International Business	20	80	100	04	04
4.3		Project Report	50	50	100	04	04	
Group A: Accounting and Finance								
4.4 A		Security Analysis and Portfolio Management	20	80	100	04	04	
4.5 A		Innovations in Accounting	20	80	100	04	04	
4.6 A		Mutual Funds	20	80	100	04	04	
Group- B: Cost Accounting								
4.4 B		Techniques of Costing	20	80	100	04	04	
4.5 B		Strategic Cost Management	20	80	100	04	04	
4.6 B		Recent Developments in Cost Accounting	20	80	100	04	04	
Group - C: Banking								
4.4 C		Foreign Exchange and Risk Management	20	80	100	04	04	
4.5 C		Financial Management in Commercial Banks	20	80	100	04	04	
4.6 C	Fund Management in Commercial Banks	20	80	100	04	04		
	Total Marks/Credits	150	450	600	24	24		



RANI CHANNAMMA  **UNIVERSITY, BELAGAVI**

Department of Mathematics

Syllabus
for
Master of Science in Mathematics
I to II Semester
(with effect from 2017 – 18)



Department of Mathematics

Choice based credit system (CBCS)

Course structure

Sl. No.	Paper & Title	Credit	No of Hrs/week Theory/ Practical	Duration of exam in Hrs Theory/ Practical	IA Marks Theory/ Practical	Marks at the Exams	Total Marks
I Semester							
1.1	Algebra -I	4	4	3 Hrs	20	80	100
1.2	Topology	4	4	3 Hrs	20	80	100
1.3	Real Analysis	4	4	3 Hrs	20	80	100
1.4	Linear Algebra	4	4	3 Hrs	20	80	100
1.5	Ordinary Differential Equations	4	4	3 Hrs	20	80	100
1.6	Discrete Mathematical Structures	4	4	3 Hrs	20	80	100
II Semester							
2.1	Algebra – II	4	4	3 Hrs	20	80	100
2.2	Complex Analysis	4	4	3 Hrs	20	80	100
2.3	Partial Differential Equations	4	4	3 Hrs	20	80	100
2.4	Functions of Several Variables	4	4	3 Hrs	20	80	100
2.5	Classical Mechanics	4	4	3 Hrs	20	80	100
2.6	Open Elective Course I. Set Theory (Arts & Commerce stream)	4	4	3 Hrs	20	80	100
	II. Integral Transforms (Science stream)						



Department of Mathematics

III Semester							
3.1	Measure Theory & Lebesgue Integration	4	4	3 Hrs	20	80	100
3.2	Differential Geometry	4	4	3 Hrs	20	80	100
3.3	Numerical Analysis	4	4	3 Hrs	20	80	100
3.4	Elective- I	4	4	3 Hrs	20	80	100
	I. Mathematical Finance						
	II. Fluid Mechanics						
	III. Commutative Algebra						
3.5	Elective- II	4	4	3 Hrs	20	80	100
	I. Algebraic Topology						
	II. Number Theory and Cryptology						
	III. Fourier Analysis						
3.6	Open Elective Course	4	4	3 Hrs	20	80	100
	I. Statistics (Arts & Commerce stream) II. Computational Methods (Science stream)						
IV Semester							
4.1	Functional Analysis	4	4	3 Hrs	20	80	100
4.2	Mathematical Methods	4	4	3 Hrs	20	80	100
4.3	Probability Theory	4	4	3 Hrs	20	80	100
4.4	Elective-I	4	4	3 Hrs	20	80	100
	I. Riemannian Geometry						
	II. Advance Graph Theory						
	III. Mathematical modeling						
4.5	Elective-II	4	4	3 Hrs	20	80	100
	I. Advanced Numerical Methods						
	II. Banach Algebra						
	III. Operations Research						
4.6	Project	4	The candidate shall submit a dissertation carrying 80 marks and appear for viva-voce carrying 20 marks				100
	Total		96				



Department of Mathematics

4.6 PROJECT

The candidate shall submit a dissertation carrying 80 marks and appear for viva-voce carrying 20 marks.



First Semester B.Sc. (Zoology)

Paper Code: ZOODSCT 1.1
Teaching Hours: 4 H / Week
Total hours:60

Paper Title: Animal Diversity
Marks: Th-80+IA-20
Credits :3

UNIT – 1

15 Hours

Kingdom Protista: General characters and classification up to classes with one example for each class. locomotion in Protozoa

Phylum Porifera: General characters and classification up to classes with one example for each class. Canal System in *Sycon*

Phylum Cnidaria: General characters and classification up to classes with one example for each class. Polymorphism

Phylum Platyhelminthes: General characters and classification up to classes with one example for each class. Parasitic adaptations

Phylum Nematelminthes: General characters and classification up to classes with one example for each class. Life history of *Ascaris*. Parasitic adaptations in roundworms

UNIT – 2

15 Hours

Phylum Annelida: General characters and classification up to classes with one example for each class. Metamerism in Annelida

Phylum Arthropoda: General characters and classification up to classes with one example for each class. Metamorphosis in Insects

Phylum Mollusca: General characters and classification up to classes with one example for each class. Torsion in gastropods

Phylum Echinodermata: General characters and classification up to classes with one example for each class. Water-vascular system in Asteroidea

UNIT – 3

15 hours

Phylum Chordata: Characters of chordates. Differences between chordates and non-chordates. General features of Protochordata (Brief note on Hemichordata, Urochordata, Cephalochordata)

Agnatha and Gnathostomata: General features of Agnatha and Gnathostomata. Classification of cyclostomes up to classes

Pisces: General features and classification up to living orders. Scales in fishes Migration in Fishes

Amphibia: General features and classification up to living orders. Parental care in amphibians

Reptiles: General features and Classification up to living orders. Differences between poisonous and non-poisonous snakes. Snake bite and treatment

UNIT – 4

15 Hours

Aves: General features. Salient features of Passeriformes, Pisciformes, Columbiformes,

Mammals: General characters. Salient features of Monotremes, Marsupialia, Insectivora, Rodentia, Perissodactyla, Chirpotera, Edentata, Cetaceae and Primates with one example for each. Ear ossicles in mammals.

Suggested Readings:

1. Agarwal V. P. and Dalela R. C. (1975): Textbook of Vertebrate Zoology. Jai Prakashnath Co.
2. Barnes, R.D. (1982): Invertebrate Zoology. Fifth edition
3. Barnes, R.D. (1982): Vertebrate Zoology. Fifth edition
4. Barnes, R.S.K., Calow, P., Olive, P.J.W. Golding, D.W. and Spicer, J.I. (2002): The Invertebrates: A
5. New Synthesis, III Edition, Blackwell Science
6. Barrington E. J. W. (1981): Invertebrate structure and Function. ELBS. Dhami P.S. and Dhami J. K.
7. (2000): Chordate Zoology. S. Chand & Co. Dhami P.S. and Dhami J. K. (2000): Invertebrate Zoology. S. Chand & Co.
8. Ekambaranatha Iyer M. and Anantakrishnan T. N. (1990): A manual of Zoology. Vol. I. Invertebrata (Part 1 &2). S. Vishwanathan Pvt. Ltd.
9. Ekambaranatha Iyer M. and Anantakrishnan T. N. (1990): A manual of Zoology. Vol. II. Chordata S. Vishwanathan Pvt. Ltd.
10. Jordan E. L. and Verma P.S. (1976): Chordate Zoology. S. Chand & Co. Jordan E. L. and Verma
11. P.S. (1976): Invertebrate Zoology. S. Chand & Co.
12. Kotpal R. L. (1993): Protozoa- Echinodermata (all volumes). Rastogi Publ. Pough H (2004): Vertebrate life, VIII Edition, Pearson International.
13. Ruppert and Barnes, R.D. (2006): Invertebrate Zoology, VIII Edition. Holt Saunders International Edition.

First Semester B.Sc. (Zoology)

Paper Code: ZOODSCP 1.1
Teaching Hours: 3 H / Week
Total hours: 45

Paper Title: Practicals-1
Marks: Th-40+IA-10
Credits : 1

ZOODSC P11-PRACTICAL-I

1. Study of the following specimens making use of permanent slides / specimens:

- i. Study of unicellular and cellular grade organized animals: *Amoeba*, *Euglena*, *Paramecium* and *Sycon*
 - ii. Study of tissue grade organized animals: *Obelia*, *Physalia*, *Aurelia*, *Metridium*, Study of flat worms: *Planaria*, *Taenia solium*
 - iii. Study of round worms: Male and female *Ascaris lumbricoides*
 - iv. Study of segmented Animals: *Nereis*, *Pheretima*, *Hirudinaria*,
 - v. Study of animal forms with jointed appendages: *Palaemon*, *Cancer*, *Limulus*, *Apis*,
 - vi. Study of soft bodied animals: *Chiton*, *Dentalium*, *Pila*, *Unio*, *Loligo*, *Sepia*,
 - vii. Study of spiny skinned animals: *Pentaceros*, *Ophiura*, *Echinus*, *Cucumaria* and *Antedon*
 - viii. Study of Protochordates: *Balanoglossus*, *Herdmania*, *Branchiostoma*
 - ix. Study of Fishes: *Torpedo*, *Labeo*, *Exocoetus*, *Anguilla*
 - x. Study of Amphibians: *Ichthyophis*, *Salamandra*, *Bufo*, *Hyla*
 - xi. Study of Reptiles: *Chelone*, *Chamaeleon*, *Draco*, *Vipera*, *Naja*
 - xii. Study of Birds: *Duck*, *Cucchoo*, *Wood pecker*, *Kingfisher*, *Owl*, *Peacock*
 - xiii. Study of Mammals: *Duck billed platypus*, *Manis*, *Bat*, *Loris*
2. Mounting of setae, blood glands, nephridia in Earthworm
(Collect the dead worms from vermicompost pits of farmers and preserve)
3. Mounting of mouth parts of honeybee, cockroach, housefly, mosquitoes
4. Mounting of brain in fowl / rat (collect dead fowl / rat heads and preserve)
5. Study tour / field visit: Compulsory tour / visit to understand faunal diversity

SUGGESTED READINGS

1. Ruppert and Barnes, R.D. (2006): Invertebrate Zoology, VIII Edition. Holt Saunders International Edition.
2. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002): *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science
3. Young, J. Z. (2004): *The Life of Vertebrates*. III Edition. Oxford university press.
4. Pough H (2006): *Vertebrate life*, VIII Edition, Pearson International.
5. Hall B.K. and Hallgrimsson B. (2008): Strickberger's Evolution. IV Edition. Jones and Bartlett Publishers Inc.
6. P. S. Dhami and J. K Dhami (2000): Practical Zoology S. Chand and Co, New Delhi

11.ZOOLOGY (Optional)

**_BSc IV Semester Scheme (CBSC - Pattern)
Zooology (Optional) Syllabus(Revised)
2018 -19 Onwards**

Semesters	Syllabus	Total Hours	Theory & Practical/ Week
IV	Cell Biology, Histology & Animal Behaviors	50hrs.	4 hrs.
	PRACTICAL	12	4 hrs.

NOTE:

THEORY MARKS			PRACTICAL MARKS		
Internal	Annual	Total Marks	Internal	Annual	Total Marks
20	80	100 marks	10	40	50 marks

Question paper pattern for THEORY examination

Que.No.	Marks	Solve	Total Marks
I	02	10	20
II	04	05	20
III	10	04	40
TOTAL -- 80 MARKS			

PRACTICAL pattern for examination

Que.No.	Solve	Total Marks
I	Make a temporary preparation of Histology slide.	10
II	Make a temporary squash preparation of Onion root tip/Grasshopper Testis/Onion flower bud	08
III	Identification (6X2)	12
IV	Field study report & viva	05
V	Journal	05
TOTAL -- 40 MARKS		



**B.Sc IV Semester Syllabus Revised (2018-19) Onwards
ZOOLOGY (Optional)**

Total Marks--80

Total Teaching--50hrs.

Cell Biology, Histology & Animal Behaviors

UNIT-I Cell Biology

Cell Biology: Ultra structure of animal cell, Cell theory & cell cycle. **1hr**
Ultra Structure & function of cell organelles: Plasma membrane, Endoplasmic reticulum, Ribosome's, Golgi-complex, Lysosomes, Mitochondria and Nucleus. **8hrs**

UNIT-II Cell Biology

Chromosomes: Structure & types of chromosomes. Ultra structure of chromosome. **2hrs**
Cell division: Types- mitosis & meiosis. **2hrs**
Cellular Aging & Cell Death: Concept of Aging theories, Effect of Aging on Cell organelles. Apoptosis, Necrosis-Definition & significance. **2hrs**
Cancer Biology: Introduction, Characteristics of cancer cells. Carcinogens, cause & prevention. **3hrs**

UNIT-III Histology

Histo chemical Techniques: Cytoplasmic & Nuclear stains. **3hrs**
Preparation of histological slides.
A). Study of histological structure and functions of the following Mammalian organs. 8hrs
a). Tongue b). Salivary glands
c). Stomach d). Intestine
e). Liver f). Kidney

UNIT-IV Histology

B). Study of histological structure and Endocrine functions of the following Mammalian organs 9hrs
a) Pituitary b) Pancreas c) Adrenal d) Thyroid
e) Parathyroid f) Thymus g) Testes h) Ovary

UNIT-V Ethology (Animal Behaviour)

Ethology: Introduction Definition, Scope of ethology. Brief Contributions of Konard Lorenz, Niko Tinbergen and Karl Von Frisch. **2hrs**
Types of Animal Behaviour: 7hrs
1). **Innate Behaviour:** Taxes, Reflexes, Instincts & Motivation.
2). **Learned Behaviour:** Habituation, Imprinting, Conditioned, Reflexes and Insight learning.
3). **Social behaviour:** Types of animal society & Colony in Honey Bees and Monkey troops.
4). **Territoriality & Courtship Behaviour** in Scorpion, Stickle Back Fish & Peacock.
5). **Study of nesting behavior and mimicry in animal.**
6). **Biological clock, Circadian rhythm and Chronobiology.**
Animal Communication: Chemical, visual and Audio. Function of



Signals odours, sounds and light.	2hrs
Parental care: Concepts, Fishes, Amphibians and Birds.	3hrs

PRACTICALS

	Total Practicals-12 hr
1) Study of permanent cytology slides of Mitosis & Meiosis.	2hrs
2) Study of temporary preparation of Mitotic stages from onion Root tip cells.	2hrs
3) Study of temporary preparation of Meiotic stages from onion Flower bud/Grass Hooper testis.	2hrs
4) Preparation and observation of permanent histological slides Stomach, Intestine, Liver, Pancreas, Kidney, Adrenal Thyroid, Testis & Ovary.	4hrs
5) Study of mimicry in leaf insect, Chameleon, Butterflies, Stick Insect, Ants, Wasps and Spiders.	1hr
6) Study of Nest and nesting material.	1hr
7) Internal Practical Test	1hr

NOTE:

1. With the help of Charts/Models/Diagrams/Printouts & Xerox Sheets are used in practical demonstration
2. Compulsory field visit to study Mimicry, Habitats and Community.
3. Submission of field visit report carries 5 marks.

REFERENCE BOOKS

1. Introduction to Histology. Gauba R.K. Tata Mc Graw Hill New Delhi.
2. Cells and Tissues: Introduction to Histology ND Cells :Rogers:A.W. AcademicPress .
3. Basic medical Histology :Biology of cells & tissues & organs Kessel R.G. oupNew York.
4. Text Book of Histology :Bloom and Fawcett.Saunders Publ.Philadelphia.
5. Bailey's Text Book of Histology.Bailee Baltimore,Willims andWilkins.
6. Text Book of Ecology : Odum.
7. Introduction to animal behavior:Aubrey Manning and Marian.S.DawkinsCambridge Uni Press.
- 8.Essentials of organizational behavior:Stephan Robbins,Prentice Hall of IndiaNew Delhi.
9. Animal Behaviour :McFarland D ELBS with Longman.
10. Ethology " Barnett.
11. An introduction to Behavioural Ecology J.R. Krebs & N.B. Davies Black wellScientific Publ.
12. Text Book of Animal Behaviour: Fatik Baran mandal. PHI Learning Pvt Ltd newDelhi.
13. Animal Behaviour :Reena Mathur,Rastogi and Coimpani.
14. Cell Biology -Chennarayappa - Unniversity Press





RANI CHANNAMMA UNIVERSITY, BELAGAVI

WEL-COME

**TO THE COURSE STRUCTRE AND SYLLABUS OF UNDERGRADUATE
PROGRAMMES – B.Sc**

V Semester

w.e.f.

Academic Year 2019-20 and onwards



B Sc V Semester (5.1)
Paper-I
ZOOLOGY (optional)

(Ecology, Evolution, Paleontology, Zoogeography, Wild life Conservation)

Total-hours,50

Marks-80

Ecology.

Earth as Living.-Planet. Sub divisions_of ecology, Scope of ecology, Biosphere
1 hr

Abiotic factors ____
Light, Temperature (Effect on Animals and Plants)
2hr

Biotic Factor

Mutualism,Commensalism,Amensialism,Parasitism,Predation
,Competition,Parasitism.
2hrs

Habitats
4hrs

Freshwater habitat — Lotic and Lentic systems
Zonation of Sea,Marine Biota, Esturine ecology, & Mangrooves
Terrestrial habitat — A brief account of Biomes.

Ecological Adaptations — Freshwater, Marine and Terrestrial.

Biogeochemical Cycles - Principles and concepts of Water, Nitrogen, Carbon,
2hrs

Oxygen cycles

Community Ecology-Community structure, Ecological niches, Edge effect,
Stratification, Ecoton.
2hrs

Population Ecology: Density, natality, mortality.Age distribution

Population growth, types and curves.
2hrs



Evolution.

The Solar System Origin of Earth , Origin of Life and its theories	03hrs
The geological time scale	03hrs
Fossils: Definition and Kinds of fossils, How fossils are formed, Methods of Preservation. Connecting links and Living fossils. The importance of fossils	02hrs
Theories of Organic Evolution :	06hrs
Lamarckism, Darwinism, Mutation Theory And the Modern Synthesis Theory;(population gene Pool, Gene Frequency . Variations — gene mutation, chromosomal mutation; Isolation and recombination.Genetic drift,Hardiwiensberg equilibrium)	
Modes of Evolution : Microevolution, Macroevolution and Mega-evolution.	02 hrs
,Evolution of Man and Horse	04 hrs
Paleontology Mesozoic reptiles with a note on Dinosaurs.	03 hrs
Zoogeography: Zoogeographical realms of world , A brief account of Wallace's line	03 hrs
Wildlife Conservation : Wildlife in India,Causes for the depletion of wildlife. Wild Life Conservation Techniques', methods'and measures Brief account of ; IUCN, WWF,Bombay Natural History Society, Indian Board for Wild Life, Red Data Book. Wild Life Act 1972 and its amendments in India,CITES. Project Tiger and Biosphere Reserve.	09hrs



Total -11 Practicals

- 1; Study of fossils (vertebrate(3) and invertebrate(3)).
1hrs
2. Mesozoic reptiles (Ichthyosaur, tyrannosaur, brontosaur, triceratops, archaeopteryx .
1hr
3. Evolution of man (Homo-erectus. Hemo-habills. Homo-neandertalences)
1hr
4. Evolution of Horse
1hr
- 5 ;Connecting links and living fossils (Neopilina, Peripatus, Limulus, Latimaria; Archaeopteryx and Duckbill platypus)
1hr
- 6 Study of threatened Animals of India (Tiger,Lion,singal horned rhinoceros
1hr
Musk deer,gaur,Golden langur,Loin tailed monkey.Python)
1hr
- 7 ;Estimation of CO_2 from different water samples
1hr
- 8; Estimation of dissolved oxygen
1hr
- 9; Estimation of Total hardness
1hr
- 10;Study of Ecological Adaptations and Morphological peculiarities,;ex-Hermit crab, 1hr
Draco,Stick insect,puffer fish,Exocoetus,Phrynosoma,chamaeleon and Bat.
- 11;Visit to nearby water body to study Ecosystem
1hr

REFERENCE BOOKS:-

Evolution : Odum

Organic Evolution: N.Arumugam

Evolution, Dobzhansky, Ayala, Stebbins & Valentine

Environmental Biology. Rastogi and Company, Meerut

Evolution of the Vertebrates, Colbert E.H. John Wiley and Sons, New York

Ecology; Principles and Application. Chapman, Cambridge university press

Environmental Biology P.R.Trivedi and gurudeep Raj.

Recent Advances in Environmental Biology –Diwan and D.K.Arora

Environmental Science; Eldon.D. Enger and Bradley.F, Smith



Suggestions for Practical Examination

SEM—V-5.I

Q. NO I) Estimation of Carbondioxide/O xgen/Total hardness	8marks
Q.NO II) Evolution (Two spottings)	4 marks
Q NO III) Fossils (Two spottings)	4 marks
Q NO IV) Identification (Zoogeography & Wild life)	4 marks
Q NO V) Project on Local Biodiversity	10 marks
Q NO. VI Viva	5 marks
Q NO. VII Journal	5 marks

Note 1 :- Examiners can alter the Scheme of marks for practical in consultation with the staff of the host college.

marks	Note :2	Theory	Internal	20
marks			Final	80
marks		Practical	Internal	10
marks			Final	40

Note 3: Question paper pattern for THEORY examination

	Q No. 1	02 marks = 20 marks	10* 02	
30 marks	Q No. II	05 marks	06* 05	=
10 marks	Q No. III	10 marks	01* 10	=
10 marks	Q No. IV	10 marks	01* 10	=

Rani Channamma University, Belagavi
B.Sc VI Semester _ 6.1

Paper I

Total hours – 50
Marks _ 80
Theory 4 hrs/week

APPLIED ZOOLOGY (optional)

Sericulture : Mulberry Silkworm and Life History of Bombyx mori

07 hrs

Rearing of Silkworm: Grainage management, Emergence of moth and fertilization, egg laying, hatching and moulting of-silkworm, spinning of cocoons, Cocoon processing, stifling and spinning silk. Filature. Non mulberry silkworm, types. in brief & Silkworm diseases- Muscardine, Grasserie, Flacherie & Pebrine.

Apiculture: Species of Honey Bees, their Social organization, Life History

05 hrs

Methods of Bee Keeping, products of Bees, & their Economic importance

Insect Pest Management : Natural control and Applied control of pests

05 hrs

Applied Control __ Mechanical, Physical, Cultural, Legal, Chemical control

Vermiculture: Earthworm species used in vermiculture, vermiculture technique, and Importance of vermiculture.

04 hrs

Aquaculture :

10 hrs

Prawn Fisheries, Species of Prawns, Culture of freshwater and marine Prawns, Preservation and processing of Prawns.

Pearl Culture : Pearl producing molluscans, Pearl formation, Pearl producing

Sites in India. Quality and composition of Pearl.

Pearl Industry: Artificial Insertion of nucleus

Brief technique of Fish culture, Preservation of fishes and their

Byproducts



Poultry : Breeds of fowl, Diseases of poultry, Poultry maintenance and By-products, and CoMposition and Nutritive value of Egg.

06 hrs

Animal Husbandary: Maintenance, Breeds Diseases, Products and By Products of the following

10 hrs

Sheep and Goats, Cow and Buffalos, Composition and Nutritive value of Milk

Lac culture: Classification of Lac insect (Techardia lacca, Life history of Lac

Insect. Host plants, Cultivation of Lac. Compostion and properties & Economic importance

3 hrs.

**Practicals – 6.1
Practicals**

Total -11

1. Project on any of the applied branch studied in theory 1
2. Study of mulberry silkworm and Life cycle 1
3. Types of non mulberry silkworms in brief and Silkworm diseases (Pebrine, Muscardine and Grasserie & Flaturie) 1
4. Species and castes of honeybees 1
5. Agricultural pests and domestic pests (total 8 varieties) 1
6. Study of fisheries __ Molluscs (three), Crustaceans (three) And Pisces (six) 1
7. Study of Varieties of sheep and goat (from chart/photographs) 1
8. Study of varieties of Cow & Buffalos(from chart/photographs) 1
9. Vermiculture__ Study of types of Earthworm species 1
- 10 Study of poultry breeds 1
- 11 Study of Lac insect (Life cycle) 1



Scheme for practicals 6.1 APPLIED ZOOLOGY

Q No. I	Sericulture	03 marks
Q No. II	Apiculture	03 marks
Q No. III	Pest management	03 marks
Q No. IV	Pisciculture	03 marks
Q No. V	Vermiculture	03 marks
Q No. VI	Animal Husbandry	06 marks
Q No. VII	Prawn & Pearl culture	04 marks
Q No. VIII	Project report & Viva	10 marks
Q No. IX	Journal	05 marks

Total 40 marks

Note 1 :Examiners can alter the Scheme of marks for practical in consultation With the staff of the host college.

Note 2 : Theory	Internal	20 marks
	Final	80 marks
Practical	Internal	10 marks
	Final	40 marks

Note 3 : Question paper pattern for THEORY examination

Q No. I marks	02 marks	10* 02	= 20
Q No. II marks	05 marks	06* 05	= 30
Q No. III marks	10 marks	01* 10	= 10
Q No. IV marks	10 marks	01* 10	= 10
Q No. V marks	10 marks	01* 10	= 10

Note 4 : Q Nos IIIrd IV & V each should have one internal option



B.Sc Sixth semester (6.2) Paper II (Microbiology and Modern techniques in Biology)

Microbiology (18 Hours)

SMH Microscopy: Compound microscope and its functions. Dark field microscope, Fluorescent microscope, Phase Contrast Microscope and Electron Microscope
Uses of different types of microscopes

VRNS Sterilization and other techniques: Physical and chemical methods

SMH Bacteria: Classification based on shapes, structure. Bacterial reproduction and growth.

KIP Virus: Morphology, chemical properties, classification, nomenclature, DNA & RNA viruses

SMH Fungi: Structure, classification and reproduction, Yeasts

Fermentation: Types of fermentor and basic functions. Methods of preservations and criteria for the selection of microorganisms

Production of antibodies: Penicillin, Streptomycin, Enzyme protease, Riboflavin 2

VRNS Oral microbial flora of the human body
Role of microbes in environment

Nanotechnology: (5 Hrs)

SMH Introduction, History, Name, Tools and Techniques in Nanotechnology.
Nanobiology - application of Nano in biology- Nano drug administration, diagnostic
And therapeutic applications. Lotus effect, Gold and Silver Nanotechnology.
Curcumin phytochemicals, Cinnamon in green nano technology

Bioinformatics (7 Hrs)

Introduction: Definition, Goal of Bioinformatics, Sequencing - Sequences analysis and Structure analysis. Applications of Bioinformatics

Classification of Biological Data Bases. Characteristics of FASTA (Fast Alignment), BLAST (Basic Local Alignment Search Tool)

Aims and goals of Human Genome Project: Main findings of human genome project.
Prediction and tools for gene prediction. Comparative genomics

SMH Proteomics: Two dimensional Gel Electrophoresis Mass spectrometry, SDS_PAGE. Structure of protein: Primary, Secondary, Tertiary and Quarternary.

Protein structure prediction [Ab initio modeling Example Rosetta]
Application of Proteome analysis, the future of Proteomics

Methods in Biology (10 Hours)

Techniques of cell fraction and centrifugation.

Homogenization and cell tissue disruption, centrifugation, ultra centrifugation

SMH DNA sequencing, in situ hybridization, DNA microchips

Genetic engineering in animals - Transgenic mouse, Transgenic sheep,

Genetically altered fish, mosquito and Drosophila.

Gene therapy in Humans

Histochemical and Immunization Techniques: ELISA, RIA, Flow cytometry

Nucleic acid blotting & their applications: Southern blotting, Northern blotting, Western blotting

Radioisotopes: Techniques in Biochemistry. Types of radioactive decay- Alpha, Beta emission & Gamma rays

Biological applications of Radioisotopes

Research Methodology: (10 Hours)

KIP

Meaning and objectives of research, motivation in research, research and scientific method, understanding the research problem, Sampling Design (Sample Survey), methods of data collection, analysis of data, Interpretation and report writing, role of computer in research

**Question paper pattern for theory examination
B.Sc Sixth Semester (Paper – II)**

Q. I	2 marks	12 questions to be given	Solve any 10	20 marks
Q. II	5 marks	6 questions to be given	Solve any 5	30 marks
Q. III	10 marks	2 questions to be given	Solve any 1	10 marks
Q. IV	10 marks	2 questions to be given	Solve any 1	10 marks
Q. V	10 marks	2 questions to be given	Solve any 1	10 marks

B.Sc Sixth Semester (Practical II) Practical Syllabus Total Practicals – 11

1.	Measurement of micro organisms (Micrometry)	1 Practical
2.	Preparation of liquid medium (Broth)	1 Practical
3.	Preparation of solid media (PDA medium and PDA plates)	1 Practical
4.	Preparation of agar slants.	1 Practical
5.	Study of different types of bacteria, viruses and fungi causing diseases in man	1 Practical
6.	Bacterial cell counting using haemocytometer.	1 Practical
7.	Simple and Gram's staining differentiation of bacteria	1 Practical
8.	Isolation, Identification and enumeration of Bacteria/Protozoa from moist soil or sewage water	1 Practical
9.	Practical application of Bioinformatics: Tool BLAST and FASTA to find out sequence of nucleotides in undesired gene/Amino acid in desired protein	1 Practical
10.	Study of Microbiological Lab Equipments: Microscope, Centrifuge, Autoclave, Pressure cooker, Laminar air flow, Streak Plate, Inoculation needle etc.	2 Practicals

Question paper pattern for practical examination

I	Microbiology, Nanotechnology	8
II	Bioinformatics	6
III	Spotting (1 each from bacteria, virus, fungi)	6
IV	Viva	5
V	Submission of detailed report on specific local problem (research)	10
VI	Journal	5

Total 40

RANI CHANNAMMA UNIVERSITY, BELGAVI
MA English under CBCS Programme
SYLLABUS
 (With effect from the academic year 2018-19)

III SEM		IV SEM	
3.1	New Literatures	4.1	European Classics
3.2	Dalit Literature	4.2	English Language Teaching
3.3	Ecocriticism and Indian Writing in English	4.3	Cultural Studies
3.4 a	Post Colonial Literature and Theory- 1	4.4a	Post Colonial Literature and Theory- 3
3.4b	Indian Literatures in Translation- 1	4.4b	Indian Literatures in Translation- 3
3.5a	Post Colonial Literature and Theory- 2	4.5a	Post Colonial Literature and Theory- 4
5b	Indian Literatures in Translation- 2	4.5b	Indian Literatures in Translation- 4
3.6	OEC: Language through Literature	4.6	Project Work

Note:

Students can choose **Postcolonial Literature and Theory** (3.4a, 3.5a and 4.4a, 4.5a)

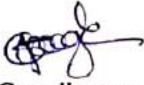
Or

Indian Literatures in Translation (3.4b, 3.5b and 4.4b, 4.5b) for their specialization.




K. L. E Society's
G.I. Bagewadi Arts, Science & Commerce College, Nipani
Department of Mathematics
Project List for M.Sc. IV Sem. 2020-21

S. No.	Roll. No.	Register No.	Name of the Student	Project Topic	Guide
1	08	MT191209	Jyoti Bharat Sutar	Network topology and applications	Sri. S. A. Chougale
2	11	MT191212	Neeta M.Bhate		
3	03	MT191204	Anita R. Hamidwade	Applications of Discrete Mathematics	Sri. S. A. Chougale
4	16	MT191217	Snehal M. Jadhav		
5	04	MT191205	Anuja G.Patil		
6	17	MT191218	Sushmita S.Pattankude	Conformal Mapping and its applications	Miss N. S. Jadhav
7	13	MT191214	Prajakta L.Bhore		
8	12	MT191213	Prachi S.Mayanna		
9	07	MT191208	Jyoti A.Patil	Mathematical methods and its applications	Miss N. S. Jadhav
10	02	MT191202	Akshata G.Majalatti		
11	06	MT191207	Arati S.Patil		
12	01	MT191201	Aishwarya Zele	Number theory and its applications	Miss V. U. Khot
13	15	MT191216	Shweta Patil		
14	14	MT191215	Sangeeta More		
15	09	MT191210	Lata R.Bharmal	Matrix representation of graphs	Sri. S. A. Chougale
16	05	MT191206	Anuradha V. Hindalkar		
17	10	MT191211	Namarata A.Patil		
18	18	MT191219	Trupti Magadum	Applications of Fourier Series and Fourier Transforms	Sri. J. N. Magadum
19	19	MT191220	Varsha Patil		
20	20	MT191221	Vijaylaxmi Kakoli		


 Coordinator
Co-ordinator
 P. G. [M.Sc., Maths]
 K.L.E's G. I. B. College, Nipani.




 Principal
PRINCIPAL
 K. L. E. Society's
 G. I. Bagewadi College, Nipani.

RANI CHANNAMMA UNIVERSITY

BELAGAVI-590 014



**A PROJECT REPORT ON
"NETWORK TOPOLOGY AND APPLICATIONS"**

SUBMITTED BY

MISS JYOTI BHARAT SUTAR
Reg. No: MT191209

MISS NEETA M BHATE
Reg. No: MT191212

**IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21**

Under Guidance of

DR.(SMT.) M. M. SHANKRIKOPP M.Sc., Ph.D.

SRI. SAMMED A. CHOUGALE M. Sc., B. Ed.

SUBMITTED TO



**COURSE CODE - D120
DEPARTMENT OF MATHEMATICS**

KLE'S G I BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,

NIPANI-591237

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NIPANI-591237

'College with Potential for Excellence'
(ACCRIGATED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)



Certificate

This is to Certify that project carried out by **MISS JYOTI BHARAT SUTAR** Reg No: MT191209, **MISS NEETA M. BHATE** Reg No: MT191212, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University Belagavi during the year 2020-21. It is certified that all correction or suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.


Sri. S. A. Chougale
Guide and Coordinator


Dr. (Smt.) M. M. Shankarkopp
HOD, Mathematics


Dr. M. M. Hurali
Principal

Examiner Name and Sign

1. 
2. 
7/10/21



RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“APPLICATIONS OF DISCRETE MATHEMATICS”

SUBMITTED BY

MISS SNEHAL M. JADHAV
Reg.No: MT191217

MISS ANUJA G. PATIL
Reg.No: MT191205

MISS ANITA R. HAMIDWADE
Reg.No: MT191204

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020 - 21

Under Guidance of

DR. (SMT). M. M. SHANKRIKOPP
M. Sc., PhD

SRI. S. A. CHOUGALE
M. Sc., B.Ed

SUBMITTED TO



COURSE CODE - D120
DEPARTMENT OF MATHEMATICS

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NIPANI-591237.

K. L. E. Society's
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI-591237.

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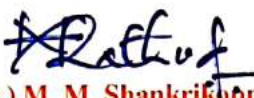
(ACCRIDITED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)



Certificate

This is to Certify that the project carried out by MISS SNEHAL M. JADHAV Reg No: MT191217, MISS ANUJA G. PATIL Reg No: MT191205 and MISS ANITA R. HAMIDWADE Reg No: MT191204, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.


Sri. S. A. Chougale
Guide and Coordinator


Dr. (Smt.) M. M. Shankrikopp
HOD, Mathematics


Dr. M. M. Hurali
Principal

Examiner Name and Sign

1. 
2. 
21/10/21

RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“CONFORMAL MAPPING AND ITS APPLICATION ”

SUBMITTED BY

MISS.PRAJAKTA.L.BHORE.
Reg.No:MT191214

MISS.PRACHI.S.MAYANNA
Reg.No:MT191213

MISS.SUSHMITA.S.PATTANAKUDE
Reg.No:MT191218

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21

Under Guidance of

DR. (SMT.) M. M. SHANKRIKOPP
M.Sc., PhD
MISS N. S. JADHAV
M.Sc., B. Ed.

SUBMITTED TO



COURSE CODE - D120
DEPARTMENT OF MATHEMATICS

K. L. E. Society's

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COLLEGE NIPANI-591237.

K. L. E. Society's

G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE


COLLEGE NIPANI-591237.

(ACCRIGATED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)




Certificate

This is to Certify that project carried out by MISS.PRAJAKTA.L.BHORE.RegNo:MT191214andMISS.PRACHI.S.MAYA NNARegNo:MT191213MISS.SUSHMITA.S.PATTANAKUDERegNo:MT191218 bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21 It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.


Miss Nikita S. Jadav
Guide


Sri. S. A. Chougale
Coordinator


Dr. (Smt.) M. M. Shankrikopp
HOD, Mathematics


Dr. M. M. Hurali
Principal

Examiner Name and Sign

1. 
2. 
3/11/21

RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“MATHEMATICAL METHODS AND ITS APPLICATIONS”

SUBMITTED BY

NAME: ARATI S. PATIL
REG: MT191207

NAME: JYOTI A. PATIL
REG: MT191208

NAME: AKSHATA G. MAJALATTI
REG: MT191202

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21

Under Guidance of

DR.(SMT.). M. M. SHANKRIKOPP
M.Sc., PhD

MISS NIKITA S. JADAV
M.Sc., B.Ed.

SUBMITTED TO



COURSE CODE - D120
DEPARTMENT OF MATHEMATICS

K. L. E. Society's

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COLLEGE NIPANI-591237.


K. L. E. Society's
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE NIPANI-591237.

(ACCRIGATED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)



Certificate

The project report has been approved as it satisfies the academic requirements in respect This is to Certify that project carried out by MISS ARATI S. PATIL Reg No: MT191207 and MISS JOYTI A. PATIL Reg No: MT191208 MISS AKSHATA G. MAJALATTI Reg No: MT191202 bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of Master of Science in Mathematics of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report of project work prescribed for the said degree.


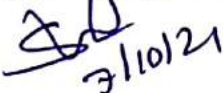

Miss Nikita S. Jadav
Guide


Dr. (Smt.) M. M. Shankrikopp
HOD, Mathematics


Sri. S. A. Chougale
Coordinator

Dr. M. M. Hurali
Principal

Examiner Name and Sign

- 
- 
3/10/21



RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“NUMBER THEORY AND IT'S APPLICATIONS”

SUBMITTED BY

MISS AISHWARYA ZELE
Reg.No: MT191201

MISS SHWETA PATIL
Reg. No: MT191216

MISS SANGEETA MORE
Reg.No: MT191215

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21

Under Guidance of

DR. (SMT). M. M. SHANKRIKOPP
M.Sc., Ph.D.

MISS. V. U. KHOT
M. Sc.

SUBMITTED TO



COURSE CODE - D120

DEPARTMENT OF MATHEMATICS

KLE'S G I BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE, NIPANI-
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Certificate

This is to certify that project carried out by MISS AISHWARYA ZELE (Reg.No:MT191201), MISS SHWETA PATIL (RegNo:MT191216) and MISS SANGEETA MORE (Reg No: MT191215) bonafide students of KLE's G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University Belagavi during the year 2020-21. It is certified that all correction or suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.



Miss V. U. KHOT
Guide


Sri. S. A. CHOUGALE
Coordinator


Dr. (Smt.) M.M. SHANKRIKOPP
HOD, Mathematics


Dr. M. M. HURALI
Principal

Examiner Name and Sign

1. 
2. 

RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“MATRIX REPRESENTATION OF GRAPHS”

SUBMITTED BY

MISS LATA R. BHARMAL
Reg. No: MT191210

MISS ANURADHA V. HINDALKAR
Reg. No: MT191206

MISS NAMRATA A. PATIL
Reg. No: MT191211

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21

Under Guidance of

DR.(SMT.). M. M. SHANKRIKOPP
M.Sc., PhD

Shri. SAMMED A. CHOUGALE
M.Sc., B.Ed.

SUBMITTED TO



COURSE CODE - D120
DEPARTMENT OF MATHEMATICS

K. L. E. Society's

G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE

COLLEGE NIPANI-591237.

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G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE NIPANI-591237.


(ACCREDITED AT 'A' LEVEL BY NAAC WITH CGPA 3.35)



Certificate

This is to certify that project carried out by MISS LATA R. BHARMAL Reg No: MT191210, MISS ANURADHA V. HINDALKAR Reg No: MT191206 and MISS NAMRATA A.PATIL Reg No: MT191211 bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.


Shri. S. A. Chougale
Guide and Coordinator


Dr. (Smt.) M. M. Shankrikopp
HOD, Mathematics


Dr. M. M. Hurali
Principal

Examiner Name and Sign

1.

2.





RANI CHANNAMMA UNIVERSITY
BELAGAVI-590 014



A PROJECT REPORT ON
“APPLICATIONS OF FOURIER SERIES AND FOURIER
TRANSFORMATIONS”

MISS TRUPTI MAGADUM
Reg. No: MT191219

MISS VARSHA PATIL
Reg. No: MT191220

MISS VIJAYLAXMI KAKOLI
Reg. No: MT191221

IN PARTIAL FULFILMENT OF
MASTERS OF SCIENCE (M.Sc. Mathematics)
Academic Year 2020-21

Under Guidance of

DR.(SMT). M. M. SHANKRIKOPP
M.Sc., PhD

PROF. MR. JINENDRA N. MAGADUM
M. Sc., B. Ed



SUBMITTED TO



COURSE CODE - D120
DEPARTMENT OF MATHEMATICS

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NIPANI-591237.

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NIPANI-591237

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Certificate

This is to Certify that project carried out by **MISS TRUPTI MAGADUM** Reg No: MT191219, **MISS VARSHA PATIL** Reg No: MT191220, **MISS VIJAYLAXMI KAKOLI** Reg No: MT191221, bonafide students of G. I. Bagewadi College, PG center Nipani, in partial fulfillment for the award of **Master of Science in Mathematics** of the Rani Channamma University, Belagavi during the year 2020-21. It is certified that all correction/suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

MR. J. N. MAGADUM

Guide

Dr. (Smt.) M. M. Shankrikopp

HOD

MR. SAMMED CHOUGALE

Coordinator

Dr. M.M. HURALI

Principal

Examiner Name and Sign

1.

2.

A PROJECT REPORT ON
"A STUDY ON CREDIT RISK ASSESSMENT IN SHRI BEERSHWAR
CO-OP CREDIT LTD, EXAMBA "(MS)



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Miss. Chaitali .S. Chavan

REG. NO: MC191801

Course code : D10

UNDER THE GUIDENCE OF

Mrs. SANGEETA P. SANSUDDI



K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON CREDIT RISK ASSESSMENT IN SHRI BEERSHWAR CO-OP CREDIT LTD, EXAMBA "(MS) submitted by Miss. Chaitali .S. Chavan (REG NO: MC191801) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Mrs. Sangeeta sansuddi

(Project Guide)


prof. B.G. Kanakanwadi

(Co-Ordinator)
Co-ordinator
P. G. [M.Com.]
K.L.E's G. I. B. College, Nipani.


Dr. M. M. Hurali

PRINCIPAL)
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

**A PROJECT REPORT ON
"A STUDY ON BUYING BEHAVIOR AT PATHI MOTORS ,IN
ANKALI CITY"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

**SUBMITTED BY
MR. CHETAN S. KORAVAR
REG. NO: MC191802
SUBJECT CODE: D10
UNDER THE GUIDENCE OF
Mrs. SANGEETA P. SANSUDDI**



**G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.**

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.**


Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON CONSUMER BUYING BEHAVIOR AT PATIL MOTORS, IN ANKALI CITY" submitted by MR. CHETAN S. KORAVAR (REG NO: MC191802) SUBJECT CODE: D10, in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Mrs. S.P. Sansuddi
Project Guide


Prof. B.G. Kankanwadi
Co-Ordinator
Co-ordinator
P. G. [M.Com.]
K.L.E's G. I. B. College, Nipani.


Dr. M.M. Hurali
PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

**"A STUDY ON BUYING BEHAVIOUR OF CONSUMERS
TOWARDS HERO MOTORCYCLE"**



**PROJECT REPORT SUBMITTED TO THE RANI
CHANNAMMA UNIVERSITY BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF
MASTER OF COMMERCE**

Academic Year 2020-21

Submitted by:

MISS. DANAMMA K. SHEDABALE

Register Number: MC191803

Course Code : D10

UNDER THE GUIDANCE OF

PROF(Mrs.) SANGEETA P.SANSUDDI



KLE SOCIETY'S

**G I BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE
NIPANI**

Department of PG Studies in Commerce, NIPPANI-591237

KLE Society's
G.I BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE,
NIPPANI

DEPARTMENT OF POST GRADUATE STUDIES IN COMMERCE

(Affiliated to Rani Channamma University, Belagavi)



CERTIFICATE

This is certifying that the project report entitled "A STUDY ON BUYING BEHAVIOUR OF CONSUMERS TOWARDS HERO MOTOCORP" is submitted to Rani Channamma University, Belagavi by MISS. DANAMMA K. SHEDABALE in partial fulfillment of the requirement for the award of degree of Master of Commerce, during the academic year 2020-21

Prof. (Mrs.) S.P. Sansuddi

Guide

Prof. B.G. Kankanwadi

Co-Ordinator
Co-ordinator
P. G. [M.Com.]

K.L.E's G. I. B. College, Nipani.

Dr. M.M. Hurali

PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
"A STUDY ON ANALYSIS OF FINANCIAL STATEMENT
OF THE JANATACO-OP.BANK LTD,SADALGA"



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY ,BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

AcademicYear2020-21

SUBMITTEDBY

Miss. DEEPALI T. MALAGE

REG. NO: MC191804

COURSE CODE: D10

UNDER THE GUIDANCE OF

PROF.SANGEETAP.SANSUDDI



K.L.E.SOCIETY'S



G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.

**K.L.E.SOCIETY'S
G.I.BAGEWADI ARTS,SCIENCE AND COMMERCE COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RAN ICHANNAMMA UNIVERSITY,
BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON ANALYSIS OF FINANCIAL STATEMENT OF THE JANATA CO-OP. BANK LTD., SADALGA" submitted by Miss. DEEPALI T MALAGE (REG NO: MC191804) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G.I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani


Prof. S.P. Sansuddi

Project Guide


Prof. B.G. Kankanwadi

Co-Ordinator
Co-ordinator
P. G. [M.Com.]
K.L.E's G. I. B. College, Nipani.


Dr. M.M. Hurali

PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
“A STUDY ON RATIO ANALYSIS, JANATA CO-OPERATIVE BANK
LTD. HARUGERI BRANCH RAIBAG ”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Miss. Karishma A. Mulla

REG. NO: MC191805

Course code : D10

UNDER THE GUIDENCE OF

Mrs. SANGEETA P. SANSUDDI



K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON RATIO ANALYSIS, JANATA CO-OPERATIVE BANK LTD. HARUGERI BRANCH RAIBAG" submitted by Miss. Karishma A. Mulla (REG NO: MC191805) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Mrs. S. P. Sanāsuddi

(Project Guide)


Prof. B. G. Kanakanwadi

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Dr. M. M. Hurali

(PRINCIPAL)
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
“IMPACT OF GST ON RETAILERS: A STUDY ON NIPANI
CITY ”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year

2020-21

SUBMITTED BY

MR. KHANDURAJ .C.AMATE

REG. NO: MC191806

COURSE CODE :D10

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**K.L.E. SOCIETY'S
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Department of Post Graduate Studies in Commerce


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CERTIFICATE

This is to certify that the project report "IMPACT OF GST ON RETAILERS: A STUDY ON NIPANI CITY" submitted by MR. KHANDURAJ C. AMATE (REG NO: MC191806) SUBJECT CODE: D10, in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


MRS. S.P. Sansuddi
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Dr. M.M. Hurali
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A PROJECT REPORT ON
"A STUDY ON CASH FLOW STATEMENT OF CHIDANAND BASAVAPRABHU
KORE SAHAKARI SAKKARE KARKHANE NIYAMIT, CHIKODI"



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Miss. LAXMI N PATIL

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Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON CASH FLOW STATEMENT OF CHIDANAND BASAVAPRABHU KORE SAHAKARI SAKKARE KARKHANE NIYAMIT, CHIKODI" submitted by Miss. LAXMI N PATIL (REG NO: MC191807) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


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Prof B G Kankanwadi
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Dr. M.M. Hurali
PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
"A STUDY ON CUSTOMER SATISFACTION TOWARDS BHARTI
AIRTELAT CHIKODI"



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY
MISS. MADHURI A. KADAPURE
REG. NO: MC191808
CODE: D10

UNDER THE GUIDENCE OF
MRS. SANGEETA P. SANSUDDI



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NIPANI

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.**


Department of Post Graduate Studies in Commerce

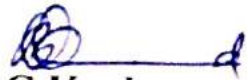
(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON COSTOMER SATISFACTION TOWARDS BHARTI AIRTEL AT CHIKODI" submitted by MISS. MADHURI A. KADAPURE (REG NO: MC191808) SUBJECT CODE: D10, in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Mrs. S.P. Sansuddi
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Dr. M.M. Hurali
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Commerce College, NIPANI.

“A STUDY ON E-RECRUITMENT AT EDLOGIX SOFTWARE SOLUTIONS
PVT LTD, HYDERABAD”



**PROJECT REPORT SUBMITTED TO THE RANI CHANNAMMA
UNIVERSITY, BELAGAVI**

**IN PARTIAL FULLFILLMENT OF THE AWARD OF
MASTER OF COMMERCE
Academic Year 2020-2021**

Submitted By:

MISS. POURNIMA.S. MATHAPATI

Register Number: **MC191809**

Course Code: D-10

Project Guide

Prof. **SNEHAL HIRIKUDE**



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K.L.E Society's

G.I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE, NIPANI

DEPARTMENT OF POST GRADUATE STUDIES IN COMMERCE

(Affiliated to Rani Channamma University, Belagavi)



CERTIFICATE

This is to certify that the project report entitled "A STUDY ON E-RECRUITMENT AT EDLOGIX SOFTWARE SOLUTIONS PVT LTD, HYDERABAD" is submitted by Miss.Pournima.S.Mathapati (REGNo:MC191809) in partial fulfillment of the requirement for the award of degree of Master of Commerce, during the academic year 2020-2021.

Prof. Snehal Hirikude

Prof. B.G. Kankanwadi
Co-ordinator
P. G. [M.Com.]
K.L.E's G. I. B. College, Nipani.

Dr. M.M. Hurali
PRINCIPAL
G.I. Bagewadi Arts, Science & Commerce College, NIPANI.

Project Guide

Co-Ordinator

Principal

Examiners:

A PROJECT REPORT ON
**“A STUDY ON SALES MANAGEMENT IN SHREE CHIDANAND
BASAPRABHU KORE SAHAKARI SAKKARE KARKHANE NIYAMIT
CHIKODI”**



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Mr. Pavankumar Hunachyali

REG. NO: MC191810

COURSE CODE: D10

UNDER THE GUIDENCE OF

PROF . SNEHAL A. HIRIKUDE



K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON SALES MANAGEMENT IN SHREE CHIDANAND BASAPRABHU KORE SAHAKARI SAKKARE KARKHANE NIYAMIT CHIKODI" submitted by Mr. Pavankumar Hunachyali (REG NO: MC191810) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post-graduation studies in commerce), Nipani.


Prof. Snehal AHirikude


Prof. B G Kankanwadi


Dr. M.M. Hurali

Project Guide

Co-Ordinator
Co-ordinator
P. G. [M.Com.]
K.L.E's G. I. B. College, Nipani.

PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
“A STUDY ON DEPOSITS AND LOANS SCHEMES AT SHRI
BEERESHWAR CO-OP CREDIT SOCIETY LTD., EXAMBA”

(MULTI STATE)



SUBMITTED TO

RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Miss. PAVITRA B. BADAMALLANAVAR

REG. NO: MC191811

COURSE CODE: D10

UNDER THE GUIDENCE OF

PROF. SNEHAL HIRIKUDE



K.L.E. SOCIETY'S G. I. BAGEWADI ARTS, SCIENCE AND
COMMERCE COLLEGE, NIPANI.

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
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Department of Post Graduate Studies in Commerce

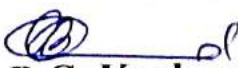
(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON DEPOSITS AND LOANS SCHEMES AT BEERESHWAR CO-OP CREDIT SOCIETY LTD., EXAMBA" (MULTI STATE) submitted by Miss. Pavitra B. Badamallannavar (REG NO: MC191811) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE SOCIETY'S G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Prof. Snehal Hirikude
Project Guide


Prof. B.G. Kankanawadi
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K.L.E's G. I. B. College, Nipani.


Dr. M.M. Hurali
PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

**A PROJECT REPORT ON
"A STUDY ON EMPLOYEE SATISFACTION IN HILL LIFECARE
LIMITED, KANAGALA"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

SUBMITTED BY

Miss. PRADNYA R. SHIRGAONKAR

REG. NO: MC191812

COURSE CODE: D010

UNDER THE GUIDENCE OF

PROF. SHEHAL HIREKUDI



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**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE, NIPANI**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON EMPLOYEE SATISFACTION IN HLL LIFECARE LIMITED., KANAGALA" is submitted by Miss. PRADNYA R. SHIRGAONKAR (REG NO: MC191812) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Prof. Shehal. Hirekudi

Project Guide


Prof. B.G. Kankanwadi

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Dr. M.M. Hurali

PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

**A PROJECT REPORT ON
"CUSTOMER'S SATISFACTION TOWARDS E-BANKING"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

SUBMITTED BY

Miss. RACHANA.V

REG. NO: MC191813

COURSE CODE: D10

UNDER THE GUIDENCE OF

PROF (MISS.) SNEHAL A.HIRIKUDE



**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI**

**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE
COLLEGE**

Department of Post Graduate Studies in Commerce


(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "Customers's Satisfacation Towards E-Banking" submitted by Miss. RACHANA.V (REG NO: MC191813) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Prof (miss.) Snehal A. Hirikude
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Prof B G Kankanwadi
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K.L.E's G. I. B. College, Nipani.


Dr. M.M. Hurali
PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
“STUDY ON IMPACT OF CO-OPERATIVE ON RURAL
DEVELOPMENT WITH SPECIAL REFERANCE PKPS SOCIETY
GUDAS”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Mr. Rahul Khilari

REG. NO: MC191814

COURSE CODE : D10

UNDER THE GUIDENCE OF

Prof. SNEHAL A HIRIKUDE



G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.

**K.L.E. SOCIETY'S
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COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report “ **STUDY ON IMPACT OF CO-OPERATIVE ON RURAL DEVELOPMENT WITH SPECIAL REFERANCE PKPS SOCIETY GUDAS**”s submitted by **Mr. Rahul Khilari (REG NO: MC191814)** in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE’s G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.

Prof. S.A. Hirikude

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Dr. M.M. Hurali

**PRINCIPAL
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A PROJECT REPORT ON
“A STUDY ON LEADERSHIP STYLES IN BANKING SECTOR AT OM
URBAN CO-OPERATIVE CREDIT SOCIETY LTD NASALAPUR ”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

MR. RAJKUMAR A. SANKPAL

REG. NO: MC191815

COURSE CODE:D10

UNDER THE GUIDENCE OF

PROF. SNEHAL HIRIKUDE



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**K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.**

Department of Post Graduate Studies in Commerce

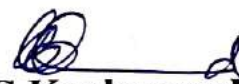
(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON LEADERSHIP STYLES IN BANKNG SECTOR AT OM URBAN CO-OPERATIVE CREDIT SOCIETY LTD NASALAPUR" submitted by **MR. RAJKUMAR A. SANKPAL (REG NO: MC191815) COURSE CODE: D10**, in partial fulfillment of the requirements for the award of degree of Master of Commerce in **KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE** (Department of post graduation studies in commerce), Nipani.


Prof. Snehal Hirikude
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Dr. M.M. Hurali
PRINCIPAL
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**A PROJECT REPORT ON
"A STUDY ON IMPACT OF GENERIC MEDICAL STORE ON LOCAL
MEDICAL STORES AT NIPANI"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

SUBMITTED BY

Miss. Rohini Chonch

REG. NO: MC191816

COURSE CODE: D10

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PROF (Mrs.) Renu Ghugare



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NIPANI**

**K.L.E. SOCIETY'S
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Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A study on impact of generic medical store on local medical stores at Nippani" submitted by Miss. Rohini chonch (REG NO: MC191816) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Prof (Mrs.) Renu ghugare
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Dr. M.M. Hurali
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A PROJECT REPORT ON
“A STUDY ON COST CUTTING AND COST MANAGEMENT OF
HIRANYAKESHI SUGAR FACTORY SANKESHIWAR”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

Miss. ROHINI MANAWADDAR

REG. NO: MC191817

SUBJECT CODE: D10

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PROF. RENU GHUGURE



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**K.L.E. SOCIETY'S
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COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON COST CUTTING AND COST MANAGEMENT OF HIRANYAKESHI SUGAR FACTORY SANKESHWAR" submitted by Miss. ROHINI H. MANAWADDAR (REG NO: MC191817) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.

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K.L.E's G. I. B. College, Nipani.**

**Dr. M.M. HURALI
PRINCIPAL
G.I. Bagewadi Arts, Science &
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A PROJECT REPORT ON
“EFFECT OF ADVERTISEMENT MESSAGE TOWARDS
CONSUMER WITH REFERENCE TO NIPPANI CITY”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

MR. SAMMED S. BALLOLE MALAWADE

REG. NO: MC191819

COURSE CODE: D10

UNDER THE GUIDENCE OF

MRS. RENU GHUGARE



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**K.L.E. SOCIETY'S
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COLLEGE**

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(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "EFFECT OF ADVERTISEMENT MESSAGE TOWARDS CONSUMER WITH REFERENCE TO NIPPANI CITY" submitted by Mr. Sammed S. Ballole Malawade (REG NO: MC191819) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


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Dr. M.M. Hurali
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**A PROJECT REPORT ON
"EFFECTIVENESS OF PROMOTIONAL TOOLS AT BATA,
BELAGAVI"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

SUBMITTED BY

M.S. SAMREEN M. TAHSILDAR

REG. NO: MC191820

UNDER THE GUIDENCE OF

MRS. RENU GHUGRE



**K.L.E. SOCIETY'S
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NIPANI.**

**K.L.E. SOCIETY'S
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COLLEGE**

Department of Post Graduate Studies in Commerce

(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "EFFECTIVENESS OF PROMOTIONAL TOOLS AT BATA, BELAGAVI" is submitted by M.S. Samreen M. Tahsildar (REG NO: MC191820) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


Mrs. Renu Ghugre

Project Guide


Prof. B. G. Kankanwadi

Co-ordinator
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K.L.E's G. I. B. College, Nipani.


Dr. M.M. Hurali

PRINCIPAL
G.I. Bagewadi Arts, Science &
Commerce College, NIPANI.

A PROJECT REPORT ON
“A STUDY ON CHANGING CONSUMPTION PATTERN – JYOTI
BAZAR EXAMBA”



SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE

Academic Year 2020-21

SUBMITTED BY

MR. SHANKAR I. KUMBAR

REG. NO: MC191821

COURSE CODE: D10

UNDER THE GUIDENCE OF

Mrs. Renu Ghugare



K.L.E. SOCIETY'S
G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE,
NIPANI.

**K.L.E. SOCIETY'S
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NIPANI.**

Department of Post Graduate Studies in Commerce


(AFFILIATED TO RANI CHANNAMMA UNIVERSITY, BELAGAVI)



CERTIFICATE

This is to certify that the project report "A STUDY ON CHANGING CONSUMPTION PATTERN – JYOTI BAZAR EXAMBA" submitted by MR. SHANKAR I. KUMBAR (REG NO: MC191821) in partial fulfillment of the requirements for the award of degree of Master of Commerce in KLE's G. I. BAGEWADI ARTS, SCIENCE AND COMMERCE COLLEGE (Department of post graduation studies in commerce), Nipani.


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**“FUND FLOW STATEMENT OF C.B.K.
SUGAR FACTORY CHIKODI”**



**PROJECT REPORT SUBMITTED TO THE RANI
CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIL FULFILLMENT OF THE
AWARD OF MASTER OF COMMERCE
Academic Year 2020-21**

Submitted by:

Ms.SHRUTI K.AMMANAVAR

Register Number: MC191822

Course code: D10

Project Guider:

Prof. (miss.) Renu Ghugare



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**DEPARTMENT OF POST GRADUATE STUDIES IN
COMMERCE**

(Affiliated to Rani Channamma University, Belagavi)



CERTIFICATE

This is certify that the project report entitled "FUND FLOW STATEMENT OF C.B.K. SUGAR FACTORY CHIKODI" is submitted to Rani Channamma University, Belagavi by Ms.SHRUTI K.AMMANAVAR in partial fulfillment of the requirement for the award of degree of **Master of Commerce**, during the academic year 2020-2021


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**A PROJECT REPORT ON
"A STUDY ON CAR LOAN SCHEME"**



**SUBMITTED TO
RANI CHANNAMMA UNIVERSITY, BELAGAVI
IN PARTIAL FULFILLMENT OF THE AWARD OF DEGREE OF
MASTER OF COMMERCE**

Academic Year 2020-21

SUBMITTED BY

Miss. Shruti Pujari

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NIPANI**



**K.L.E. SOCIETY'S
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RANI CHANNAMMA UNIVERSITY, BELAGAVI-590 014



A DISSERTATION ON
"SHAKUNTALA AS A PASSIVE HEROIN FROM
ABHIGNAYANA SHAKUNTALA"

Course Code

Submitted By

D 060

Miss. Anita Virupakshi Malakapure .
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IN PARTIAL FULFILMENT OF
MASTERS OF ARTS (M.A. ENGLISH)

Academic Year 2020-2021

Under the Guidance of

Mrs. Savitri .B.MANGAVATE M.A.KSET.B.ED
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SUBMITTED TO



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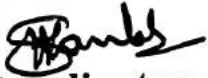
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CERTIFICATE

This is to certify that the dissertation entitled "SHAKUNTALA AS A PASSIVE HEROIN FROM ABHIGYANAYAN SHAKUNTALA" is a record of *bona fide* research carried out by Miss. Anita Malkapure under the guidance and supervision of Mr. Satish H. Kamble during the period of May 2021 to September 2021 at the Department of English, K.L.E. Society's G. I. Bagewadi Arts, Science and Commerce College, Nipani and submitted to the College in partial fulfillment of the requirements for the award of **Master of Arts in English**.


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A DISSERTATION ON
"OKONKWO AS A TRAGIC HERO", FROM "THINGS FALL APART"

Course code
D 060

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This is to certify that the dissertation entitled "**Okonknow as a tragic Hero**", From "**Things Fall Apart**" is a record of bona-fide research carried out by **Miss. Asma Ghuduso Makandar** under my guidance and supervision during the period of March 2021 to September 2021 at the Department of English, at K. L. E. Society's G.I .Bagewadi Art, science and commerce College, Nipani and submitted to the college in partial fulfillment of the requirements for the award of Masters of Arts in English.


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A DISSERTATION ON
"PROBLEMS OF INDIAN WOMEN IN CRY THE PEACOCK OF

ANITA DESAI" *Course Code*
D 060

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A DISSERTATION ON
"TRAIN TO PAKISTAN AS A CRITIQUE OF COLONIAL
MODERNITY"

Course code
D060

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This is to certify that the dissertation entitled "Train to Pakistan as a Critique of Colonial Modernity" is a record of *bona fide* research carried out by Smt. Shaista Ghori under the guidance and supervision of Mr. Satish H. Kamble during the period of May 2021 to September 2021 at the Department of English, K.L.E. Society's G. I. Bagewadi Arts, Science and Commerce College, Nipani and submitted to the College in partial fulfillment of the requirements for the award of **Master of Arts in English**.


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A DISSERTATION ON

***“THE TRANSFORMATION OF RAJU FROM A TOUR GUIDE
TO A SPIRITUAL GUIDE”***

Course code - D060

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**IN PARTIAL FULFILMENT OF
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Academic year 2020-2021**

**Under the Guidance of
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CERTIFICATE

This is to certify that the dissertation entitled "THE TRANSFORMATION OF RAJU FROM A TOUR GUIDE TO A SPIRITUAL GUIDE" is a record of bona-fide research carried out by **Smt. Vidya Garasangi** under the guidance and supervision of **Prof. Vinayak Sutar** during the period of May 2021 to September 2021 at the Department of Studies in English, at K. L. E. Society's G. I. Bagewadi Arts, Science and Commerce College, Nipani and submitted to the college in partial fulfillment of the requirements for the award of **Masters of Arts in English**.



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RANI CHANNAMMA UNIVERSITY, BELAGAVI-590014



**A DISSERTATION ON
THE POLITICS OF CULTURE IN "THE DESERT FLOWER"**

Course Code — D 060

**Submitted by
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**IN PARTIAL FULFILMENT OF
MASTERS OF ARTS (M.A. ENGLISH)
ACADEMIC YEAR 2020-2021**

**Under the Guidance of
Prof. Vinayak Sutar**

SUBMITTED TO



**DEPARTMENT OF ENGLISH
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This is to certify that the dissertation entitled "*The Politics of Culture in The Desert Flower*" is a record of *bona fide* research carried out by Smt. Vijaylaxmi Hiremath under the guidance and supervision of Prof. Vinayak Sutar during the period of May 2021 to September 2021 at the Department of English, K.L.E. Society's G. I. Bagewadi Arts, Science and Commerce College, Nipani and submitted to the College in partial fulfillment of the requirements for the award of **Master of Arts in English**.


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