

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-I**  
(Biodiversity of Plant and Diversity of Algae)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer Five Questions in all, selecting at least Two Questions from each group.  
All questions carry equal marks.*

**GROUP 'A'**

1. Mention few major factors for the decline of Biodiversity.
2. What are the important attributes made at global level to conserve Biodiversity ?
3. Describe ecosystems. Give in detail various component of an ecosystem citing suitable example.
4. Explain the following :-  
(a) Status of protection of Biodiversity in India.  
(b) Major Causes of Extinction of various Animal species.
5. Write short notes on any **Two** of the following:  
(a) Nitrogen Cycle (b) Carbon Cycle  
(c) Pyramid of Biomass (d) Calculation of Productivity in an Ecosystem  
(e) Corbet National Park, Uttarakhand

**GROUP 'B'**

6. Giving suitable diagram, describe ultra structure of a Cyanophycean cell. In what respect it differs from a green cell.
7. How different groups of Algae classified on the basis of Pigments they contain. What are their types ?
8. What is **Isomorphic Alternation** of generation ? Explain in context to life cycle of *Ectocarpus*.
9. Describe mode of sexual reproduction in any member of *Chlorophyceae* studied by you. Also give suitable diagram to justify your answer.
10. Write short notes on any **Two** of the following.  
(a) Role of Nostoc as Nitrogen fixer (b) Source of Agar-Agar  
(c) Aplanospores (d) Macrandrous species of *Oedogonium*  
(e) Algae as food.

\* \* \*

**Examination Programme, 2016**  
**M.Sc. Botany, Part-I**

<i>Date</i>	<i>Papers</i>	<i>Time</i>	<i>Examination Centre</i>
12.05.2016	Paper-I	8.00 AM to 11.00 AM	Nalanda Open University, Patna
14.05.2016	Paper-II	8.00 AM to 11.00 AM	Nalanda Open University, Patna
16.05.2016	Paper-III	8.00 AM to 11.00 AM	Nalanda Open University, Patna
18.05.2016	Paper-IV	8.00 AM to 11.00 AM	Nalanda Open University, Patna
20.05.2016	Paper-V	8.00 AM to 11.00 AM	Nalanda Open University, Patna
24.05.2016	Paper-VI	8.00 AM to 11.00 AM	Nalanda Open University, Patna
26.05.2016	Paper-VII	8.00 AM to 11.00 AM	Nalanda Open University, Patna
28.05.2016	Paper-VIII	8.00 AM to 11.00 AM	Nalanda Open University, Patna

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-II**  
(Microbiology and Diversity of Fungi)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer Five Questions in all, selecting at least Two Questions from each group.  
All questions carry equal marks.*

**GROUP 'A'**

1. What is Genetic recombination ? Describe any one method of Genetic recombination in Bacteria.
2. Describe the ultra structure of TMV. How do they replicate inside the host. Also mention mode of transmission of TMV.
3. Write short notes on the following :-
  - (a) Cell wall of Gram+ and Gram- bacteria.
  - (b) Ultra Structure of Flagella of Bacteria.
4. Write an essay on role of Bacteria in Industry.
5. Write short notes on any **Two** of the following:
  - (a) Robert Koch
  - (b) Gram Staining
  - (c) Synthetic culture media
  - (d) Role of Bacteria in Recombinant DNA research

**GROUP 'B'**

6. Describe a method for cultivation of any edible Mushroom.
7. Describe various steps in the development of Ascus and Ascospore in any member of Ascomycetes studied by you.
8. What is Mycorrhiza ? What are their types ? How do they help in enhancing the fertility of soil.
9. What is parasexuality ? Describe parasexual cycle in fungi.
10. Write an essay on Mycotoxins.

\* \* \*

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER—III**  
(Plant Pathology)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer any Five Questions. All questions carry equal marks.*

1. Write short notes on any **Four** of the following :—
  - (a) B. B. Mundkar
  - (b) Robert Koch
  - (c) Inoculum potential
  - (d) Incubation and its significance
  - (e) Isolation
  - (f) E. J. Butler.
2. What do you mean by toxin in relation to plant disease ? What are ultra structural changes due to action of toxins in the host plant ?
3. What are **Phytoalexins** ? Describe different types of **Phytoalexins** and also discuss their role in Host plant defence.
4. What do you understand by the term resistance for a disease by plant ? Describe different kinds of disease resistance found in the host plant.
5. Write short notes on any **Four** of the following :—
  - (a) Eradication of alternate host
  - (b) Rouging
  - (c) Mixed cropping
  - (d) Hot water treatment
  - (e) Disease endurance
  - (f) Pre-disposing factors
6. Write short notes on the following :—
  - (a) Soil amendment as a measure to reduce soil borne inoculums.
  - (b) Crop rotation and control of soil-borne inoculums.
7. Give an account of Organic fungicides. What are qualities of good organic fungicides ?
8. What is **rhizosphere** micro flora ? Highlight important factors which supports the built up of **rhizosphere** micro flora.
9. Write in short pathological notes on any **Two** of the following :—
  - (a) Stem Rust of Wheat
  - (b) Red Rot of Sugarcane
  - (c) Late blight of Potato
  - (d) Loose smut of wheat
10. Write short notes on any **Two** of the following :—
  - (a) Etiology and Symptoms of Bunchy top of Banana
  - (b) **Hypertrophy and Hyperplasia**
  - (c) Etiology and symptom of *die back of Chilli*
  - (d) Important diseases of Mustard with causal organism and relevant symptoms

\* \* \*

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-IV**  
(Biology and Diversity of Bryophyta and Pteridophyta)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer Five Questions in all, selecting at least Two Questions from each group.  
All questions carry equal marks.*

**GROUP 'A'**

1. Give an account of classification of Bryophytes up to order levels.
2. Describe different methods of vegetative reproduction in Bryophytes.
3. Write short notes on :-
  - (a) Fossil **Hepaticopsida**
  - (b) Fossil **Bryopsida**
4. Give an account of *Jungermaniales*. What are its affinities ?
5. Write short notes on any **Two** of the following:
  - (a) Capsule of *Calobryum*
  - (b) Sex organ in **Metzerineae**
  - (c) Theories of Progressive sterilization of Sporogenous tissue
  - (d) Apospory
  - (e) Economic importance of Bryophytes

**GROUP 'B'**

6. What is heterospory and seed habit ? Describe it with reference to life cycle of *Selaginella*.
7. Describe the salient features in the life cycle of *Psilotum*.
8. Write short notes on any **Two** of the following:
  - (a) Affinities of *Isoetales*
  - (b) Nature of fertile spike of *Ophioglossum*
  - (c) Sporocarp of *Azolla*
  - (d) Characters of Eusporangiate fern.
9. Describe the life cycle of any member of order **Filicales**.
10. Write short notes on any **Two** of the following:
  - (a) Actinostele
  - (b) Sorus
  - (c) Siphonostele
  - (d) Broad classification of Pteridophytes.

\* \* \*

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-V**  
(Diversity of seed plants and their taxonomy)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer Five Questions in all, selecting at least Two Questions from each group.  
All questions carry equal marks.*

**GROUP 'A'**

1. Describe the development of male gametophyte of *Pinus*.
2. Write short notes on any **Two** of the following:
  - (a) Resemblance of Gymnosperms with Pteridophytes
  - (b) Geological time scale
  - (c) Form genera
3. Give salient features of Phylogeny of Corditales.
4. Describe salient features of order *Ginkgoales*.
5. Write short notes on any **Two** of the following:
  - (a) Leaflet of *Cycas*
  - (b) Ovule of *Pinus*
  - (c) Phylogeny of Gnetales
  - (d) Medicinal uses of Gymnosperms

**GROUP 'B'**

6. Give taxonomical importance of alpha and omega taxonomy.
7. What was the basis for **Takhtajan system** of classification ? Highlight its merits and demerits.
8. Describe floral characters and phylogeny of family Magnoliaceae.
9. Write short notes on any **Two** of the following:
  - (a) Taximetrics
  - (b) Chemotaxonomy
  - (c) Homology and Homoplasy
  - (d) Natural system and Artificial system
10. Write short notes on any **Two** of the following:
  - (a) Main Herbaria in India
  - (b) National Botanical Research Institute, Lucknow
  - (c) Palyno taxonomy
  - (d) Special type of inflorescence

\* \* \*

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-VI**  
(Management of Forest Resources)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer any Five Questions. All questions carry equal marks.*

1. What are the benefits of forest ? Explain in detail.
2. How gums, Resins and essential oil is procured from forest resource. Explain.
3. Describe ecological pyramids of forest ecosystem described as :-  
(a) Pyramid of energy      (b) Pyramid of Biomass      (c) Pyramid of number
4. Explain different task of forest management.
5. Write short notes on any **Two** of the following :—  
(a) Fundamental classification of forest      (b) Forest Conservation Act 1980  
(c) Control of Forest Resource      (d) Deforestation
6. Discuss briefly importance of Agroforestry.

***Or***

What is MAB ? Describe its project related to forest.

7. How the principle of Micro-propagation can be applied in tree species ?
8. Write short notes on any **Two** of the following :—  
(a) Artificial gene transfer system  
(b) Application of principle of Genetic engineering in Forestry  
(c) Protocol for Protoplast culture and fusion  
(d) Applications of Haploidy
9. Describe the key factors for Integrated Pest Management and its scope.
10. What is Lac ? mention uses of Lac, its distribution and hosts.

***Or***

Describe merits and demerits of artificial and natural regeneration.

\* \* \*

<b>For Practical Counselling Class &amp; Practical Examination Programme Please See on Back Page.</b>
---

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-I**  
**PAPER-VII**  
(Cell Biology)  
*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer any Five Questions. All questions carry equal marks.*

1. Give an experimental evidence to support biochemical theory of origin of life.
2. Describe fluid mosaic model to explain ultra structure of a membrane. Why it is universally accepted ?
3. State and explain the origin and function of Golgi bodies.
4. Describe ultra structure of Chloroplast. What are the specific functions of different structural components ?
5. Write short notes on any **Two** of the following :—
  - (a) Nucleosome
  - (b) Lampbrush chromosome
  - (c) Polytene chromosome
  - (d) Histone proteins
6. Describe with suitable diagram replication of DNA and the mechanism involved.
7. Write short notes on any **Two** of the following :—
  - (a) Chargaff's rule
  - (b) Experiment of Messelson and Stahl
  - (c) Z-DNA
  - (d) The concept of central dogma
8. Write short notes on any **Two** of the following :—
  - (a) Ames test
  - (b) Chemotherapy
  - (c) Prevention of cancer
  - (d) Hormone therapy
9. Give an illustrated account of mitotic cell division. What is its significance ?
10. Write short notes on any **Two** of the following :—
  - (a) Ecological amplitude
  - (b) Cell interaction
  - (c) Apoptosis
  - (d) Gene amplification

\* \* \*

<b>For Practical Counselling Class &amp; Practical Examination Programme Please See on Back Page.</b>
---

**NALANDA OPEN UNIVERSITY**

**M.Sc. Botany, Part-I**

**PAPER-VIII**

(Anatomy and Embryology)

*Annual Examination, 2016*

**Time : 3 Hours.**

**Full Marks : 80**

*Answer Five Questions in all, selecting at least Two Questions from each group.  
All questions carry equal marks.*

**GROUP 'A'**

1. Describe different types of Meristems on the basis of origin and function.
2. What are factors affecting differentiation and morphogenesis in plants.
3. Write short notes on any **Two** of the following :-
  - (a) Mutual incompatibility
  - (b) Ground meristems
  - (c) Actinomorphic flower
  - (d) Tunica corpus theory
4. Give an account of vasculature of a typical dicotyledonous flower.
5. Give an account of role of Phellogen in healing of wound.

**GROUP 'B'**

6. Describe different barriers of fertilization. How it can be reduced ?
7. What are Endosperms ? Describe different types of development of Endosperm.
8. Describe in detail the uses of experimental embryology.
9. Describe a protocol for the development of a haploid through anther culture.
10. Write short notes on any **Two** of the following :-
  - (a) Parts of a seed
  - (b) Parthenocarpy
  - (c) Culture media for Micro-propagation
  - (d) Polyembryony

\* \* \*

**For Practical Counselling Class & Practical Examination Programme  
Please See on Back Page.**



**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER-IX**  
(Plant physiology and Biochemistry)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer Five Questions in all, selecting at least Two Questions from each group.***  
***All questions carry equal marks.***

**GROUP 'A'**

1. Distinguish between  
(a) Long day plant and short day plant.  
(b) Photoperiodism and Phototropism.
2. What is selective transportation of molecules and ions? Discuss its mechanism.
3. What are Phytonormones? Describe the mode of action of Gibberellin.
4. What is Photophosphorylation? Describe cyclic and Non-cyclic photophosphorylation.
5. Describe briefly the role of growth hormones in the germination of seeds.

***Or***

Write short notes on any two of the following:

- (a) Method of Breaking dormancy of seed      (b) Chemosynthesis  
(b) Cytokinin and senescence of seed      (d) Florigen

**GROUP 'B'**

6. Explain Enzyme kinetic and multi-substrate reaction.
7. Describe different types of vitamins. How are they synthesized to perform biological needs.
8. What is Electron transport chain? How ATP is synthesized.
9. Write short notes on any two of the following:  
(a) Entropy                                      (b) Nitrification                                      (c) Transamination  
(d) Leghaemoglobin and its role in N<sub>2</sub> fixation      (e) Krebs's cycle (only cycle)
10. What are secondary metabolites? What are commercial value of secondary metabolites.

❧ ❧ ❧

***Examination Programme, 2016***  
**M.Sc. Botany, Part-II**

<b>Date</b>	<b>Papers</b>	<b>Time</b>	<b>Examination Centre</b>
01.06.2016	Paper-IX	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
03.06.2016	Paper-X	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
07.06.2016	Paper-XI	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
09.06.2016	Paper-XII	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
11.06.2016	Paper-XIII	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
13.06.2016	Paper-XIV	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
15.06.2016	Paper-XV	12.00 Noon to 3.00 PM	Nalanda Open University, Patna
17.06.2016	Paper-XVI	12.00 Noon to 3.00 PM	Nalanda Open University, Patna

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER-X**  
(Cytogenetic and crop improvement)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer any Five Questions. All questions carry equal marks.***

1. What do you mean by inversion? Explain pericentric and paracentric inversion.
2. Give an account of the structure and significance of B-chromosome.
3. Write short notes on any two of the following :—
  - (a) Autopolyploid
  - (b) Allopolyploid
  - (c) Euploids
  - (d) Origin of Aneuploids.
4. What are the molecular mechanism of mutation? Explain with suitable examples.
5. Write short notes on the following :—
  - (a) Type of chromosome banding technique
  - (b) ionizing and Non-ionizing radiations
6. How Mendelian 9:3:3:1 ratio stands modified due to interaction of two genes? Explain with ONE suitable example.
7. How PCR technique can be utilized to amplify DNA segment?
8. Explain any two sex-linked characters with suitable example.
9. Write short on the following :—
  - (a) Bacteriophage as vectors in gene cloning.
  - (b) Role of genetic engineering in agriculture

***Or***

Role of genetic engineering in Medicine.
10. Write notes on the following :—
  - (a) RFLP
  - (b) Lac Operon

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER–XI**  
(Molecular Biology)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

*Answer any Five Questions. All questions carry equal marks.*

1. Describe mice experiment to prove that there is a method of transfer of genetic material in Bacterium Pneumococcus.
2. Describe how packaging of DNA takes place in eukaryotes? What is the significance of packaging of this DNA?
3. Explain in step-wise manner that Replication of DNA in Prokaryotes is semi-conservative. Name the enzymes involved.
4. Write short notes on:
  - (a) Nitrogenous bases
  - (b) Significance of repair of DNA or Mismatch repair.
5. What are general properties of the genetic code? Explain wobble hypothesis.
6. Describe steps involved in the elongation of polypeptide during translation in prokaryotes.
7. What do you mean by splicing of RNA? Describe in detail the process of Pre-mRNA splicing.
8. Explain one gene one enzyme hypothesis.
9. Write short notes on any two of the following:
  - (a) Pseudo genes      (b) Chargaff's rule
  - (c) Selfish gene      (b) Split gene
10. Describe the concept of Prototrophs and Auxotrophs.

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER–XII**  
(Environmental Biology)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer any Five Questions. All questions carry equal marks.***

1. Name and describe various soil types of the world.
2. Define Ecosystem. What are various components of a forest Ecosystem?
3. Write short notes on:
  - (a) Green House effect
  - (b) Interaction among population.
4. Write short notes on any **two** of the following:
  - (a) Ozone depletion
  - (b) Acid rain
  - (c) Effect of soil pollution
  - (b) Air pollutants
5. What is Environmental Impact Assessment (EIA)? Discuss its importance in relation to developmental plans of the country.
6. Write short notes on:
  - (a) Biodegradable and Non-Biodegradable substance
  - (b) Reasons for conservation of Biodiversity
7. What is sustainable development? Discuss perspectives and strategies of national and international sustainable development.
8. Describe in detail steps taken for conservation of Biodiversity at Global level.
9. Write short notes on any **two** of the following:
  - (a) IUCN and its significance
  - (b) Reasons for depletion of wild life
  - (c) Biosphere Reserve
  - (d) Threatened categories.
10. Write short notes on any **two** of the following:
  - (a) Endemism
  - (b) Kinds of natural disaster
  - (c) Natural hazard management
  - (d) Bhopal gas tragedy.

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER–XIII**  
(Plant Resource utilization and conservation)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer any Five Questions. All questions carry equal marks.***

1. Write an essay on National park and its significance.
2. Write short notes on:
  - (a) World centre of Primary diversity
  - (b) World centre of secondary diversity
3. What do you mean by the term Green Revolution? What were the basic strategies of green revolution?
4. Describe a method of propagation ex-plant, adopting the principle of tissue culture.
5. Write short notes on the following:
  - (a) Need of wild life protection
  - (b) NBPGR (National Bureau of Plant Genetic Resources)
6. Write short notes on any **two** of the following:
  - (a) DBT
  - (b) ICAR
  - (c) CSIR
7. Describe the classification of mangrove and its distribution in India.
8. Describe briefly the importance of in situ and ex-situ conservation. Why it is needed?
9. Write short notes on any **four** of the following:
  - (a) Seed Bank
  - (b) Gene Bank
  - (c) Genomic libraries
  - (d) Gene bank at global level
  - (e) Botanical Gardens in India
  - (f) Wet lands of Bihar
10. Write short notes on:
  - (a) Cultivation practices of Tea
  - (b) Manufacture of paper from pulp.

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER-XIV**  
(Ethno botany)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer any Five Questions. All questions carry equal marks.***

1. Discuss, giving suitable examples of plants, how ethnomedicine has helped in the development of modern medicines.
2. Write methods and approach of germplasm conservation.
3. Write short notes on any **two** of the following:
  - (a) Pharmacology
  - (b) NMRI
  - (c) Beneficial effects of Betel Nuts
  - (d) seed Banks
4. What do you mean by aromatic plants? Write names (Botanical name and family) of five aromatic plants.
5. Explain ethnobotany as a discipline of Botany. Describe importance of studying this.
6. Write short notes on:
  - (a) Source of edible oil
  - (b) Medicinal property of Ashwagandha.
7. Give a brief account of any Four of the drug yielding plants. Also mention their uses in pharmaceutical industry.
8. What are minerals? What are their types and functional units of biological significance? Name four of them.
9. Write short notes on any **two** of the following:
  - (a) Drug therapy
  - (b) Interaction of drug with body
  - (c) Characteristics of vitamins
  - (d) Drug formulation
10. Write short notes on:
  - (a) Storing of herbal drugs
  - (b) Ethno botanical Centres

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER–XV**  
(Aerobiology)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

*Answer any Five Questions. All questions carry equal marks.*

1. What are micro-organisms? On What basis their taxonomic position is decided.
2. Describe salient features of virus.
3. Give an account of sexual spores of fungi.
4. What is allergy? Write short notes on allergy.
5. Describe aerobiology in relation to plant pathology.
6. Describe the analytical procedure for the identification of viable and non-viable micro-organisms.
7. Write short notes on any **two** of the following:
  - (a) Sampling technique
  - (b) Microsporogenesis
  - (c) Morphology of Pollen
  - (d) Air borne microorganisms.
8. What do you mean by the term forecasting in aerobiology? Explain.
9. How the meteorology help in forecasting in aerobiology.
10. Write short notes on any **two** of the following:
  - (a) Protozoa
  - (b) Mycoplasma
  - (c) Culturable air borne micro-organisms
  - (d) Sultons model.



<b>For Practical Counselling Class &amp; Practical Examination Programme Please See on Back Page.</b>
---

**NALANDA OPEN UNIVERSITY**  
**M.Sc. Botany, Part-II**  
**PAPER–XVI**  
(Biotechnology and Bio-Informatics)  
*Annual Examination, 2016*

**Time: 3 Hours.**

**Full Marks: 80**

***Answer any Five Questions. All questions carry equal marks.***

1. Describe the role of Biotechnology in agriculture.
2. How can *Agrobacterium* plasmid be utilized to introduce desired gene in host plant.
3. Describe the role of vectors in recombinant DNA technology.
4. What is somatic hybridization? Describe its application and limitations.
5. Write short notes on any **two** of the following:
  - (a) Protoplast isolation
  - (b) *in situ* conservation
  - (c) Cybrids
  - (d) Androgenesis
6. Give an account of role of cryopreservation in conservation of germ plasm.
7. Fermentation is the base of modern Biotechnology, Discuss the statement.
8. Describe the technique and application of micro-array technology.
9. Write short notes on any **two** of the following:
  - (a) DNA chips
  - (b) NCBI
  - (c) Types of Proteomics
  - (d) Byte
10. Write short notes on any **two** of the following:
  - (a) Different methods of sterilization
  - (b) Commonly used culture media and their composition in the field of tissue culture
  - (c) Structure of typical IgG
  - (d) Cell mediated immunity



<b>For Practical Counselling Class &amp; Practical Examination Programme Please See on Back Page.</b>
---