

ADIKANI NANNAYA UNIVERSITY
B.SC .BIOCHEMISTRY SYLLABUS UNDER CBCS (w.e.f. 2015-16, Revised)
VI th SEMESTER
Elective Theory –A
BCT-601: Basic Microbiology
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Robert Koch
2. Germ theory of disease
3. Whittaker's five kingdoms
4. General characteristics of viruses
5. TMV
6. Typhoid
7. General characteristics of Algae
8. Asexual reproduction of fungi

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Discuss the contributions of Antonvon Leeuwenhoek and Alexander Fleming
Or
B. Explain the role of Microorganisms in fermentation with examples
10. A. Classify the Microorganisms according to Carl woese's Domain system with phylogenetic trees
Or
B. Discuss the difference between Prokaryotes and Eukaryotes
11. A. Give an introduction to viruses with special reference to the structure and replication of Pox virus & Polio virus.
Or
B. Briefly discuss the Protozoan diseases that you known
12. A. Describe in details about the ultra structure of an Algae
Or
B. Mention the applications of Algae in various fields
13. A. Discuss the general characteristics of Fungi
Or
B. Give the Economic importance of fungi in deta

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Cluster Elective 601 Paper: VIII-A-I
CLINICAL BIOCHEMISTRY
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Buffers
2. Spectrophotometer
3. Diabetes
4. GTT
5. Plasma proteins
6. SGOT & SGPT
7. Nephritis
8. Jaundice

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Write the importance and uses of Centrifuge and Water bath in Clinical Biochemistry lab
Or
B. How to prepare Normal, Molar, Percentage solutions (with formulas) in lab
10. A. What is Diabetes? How glucose level are regulated in the body discuss the metabolic process
Or
B. Write about plasma lipoproteins and their functions and disorders
11. A. Write the nomenclature and classification of Enzymes in detail
Or
B. Explain what are the biomarkers influenced in clinical diagnosis
12. A. What are trace elements? Write the biological significance of Selenium and Chromium
Or
B. What are buffers and write role of buffers in biological systems
13. A. Write a short notes on Creatine metabolism
Or
B. What is jaundice and write about different types of jaundice in detail

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B.SC .BIOCHEMISTRY SYLLABUS UNDER CBCS(w.e.f. 2015-16, Revised)
BCT-601-Cluster Elective Paper: VIII-A-II
HAEMATOLOGY
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Anticoagulants
2. Blood smear preparation
3. Erythropoiesis
4. ESR
5. Sickle cell anaemia
6. Haemocytometer
7. Blood components
8. Leukaemia

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Write the requirements and conditions to construct a clinical laboratory
Or
B. Describe the different types of blood smear preparation
10. A. Write the functions of haemoglobin and write different types of haemoglobin
Or
B. Write the normal values and significance of RBC and WBC counts
11. A. Write the mechanism of blood coagulation process in detail
Or
B. Define anaemia and write about different types of anaemia
12. A. Write a short notes on lab automation
Or
B. Write the different types of cell counters
13. A. What are the procedures involved in identification of Blood group and Rh system
Or
B. Write short notes on blood components and their significance

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VI TH SEMESTER
BCT-601 Cluster Elective Paper: VIII-A-III

MEDICAL MICROBIOLOGY
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I . ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Bacterial endotoxins
2. AIDS
3. Diphtheria
4. Gonorrhoea
5. Acute respiratory syndrome
6. Rabies
7. Tetanus
8. Normal flora of UGT

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Define normal flora? And Mention in detail about the normal flora o human skin & upper respiratory tract
Or
B. Explain the normal flora of intestinal tract with neat diagram
10. A. Define virulence? Explain about the various virulence factors
Or
B. Discuss the mechanism of bacterial pathogenicity & various types of bacterial pathogens
11. A. Discuss in detail about Nosocomial infection & its epidemics
Or
B. Mention “Emerging and reemerging infectious diseases
12. A. Give a detail note on the causative agent, symptoms & preventive measure of T.B
Or
B. What are the causative agents, symptoms & preventive measures of the diseases “transmitted by direct contact”
13. A. Discuss “Malaria “in detail
Or
B. Briefly describe “water borne microbial diseases “

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B.SC .BIOCHEMISTRY SYLLABUS UNDER CBCS (w.e.f. 2015-16, Revised)
VI TH SEMESTER
Elective Theory: BCT-602: Biochemical Correlations in Disorders
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Hypo and Hyper Pituitarism
2. Hyper thyroidism
3. Pellagra
4. Osteoporosis
5. Alzheimer's disease
6. Grave's disease
7. Renal calculi
8. Wilson's disease

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Explain the hormonal action of pituitary gland and their disorders
Or
B. Explain the disorders of Thyroid gland
10. A. Write short notes on Malnutrition disorders
Or
B. Write the deficiencies of water soluble vitamins in detail
11. A. Write short notes on hemoglobinopathies
Or
B. Discuss about systemic diseases
12. A. Write the organ specific immune diseases
Or
B. Write short note on "Alzheimer's and Huntington's "syndrome
13. A. Discuss the causes of liver dysfunction and specific disorders
Or
B. Write the mechanism of renal functions and renal failure

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VI TH SEMESTER
Elective cluster-602
BCT-602 Cluster Electives –VIII-B-I
Organization of cell structure
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF THE FOLLOWING

5X5=25MARKS

1. Cell theory
2. Active transport
3. Unique & repetitive DNA
4. cAMP
5. Glycosylation
6. Chloroplast
7. Nucleus
8. Apoptosis

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Compare prokaryotic cell with eukaryotic cell
Or
B. Explain about different types of transport mechanisms
10. A. Write a detail account on cell membrane receptors
Or
B. Explain in brief about enzyme linked receptors & ion channel linked receptors
11. A. Explain the structure & function of Mitochondria with a neat diagram
Or
B. Explain the structure & function of ER & Golgi complex
12. A. Write in detail about cytoskeleton
Or
B. Discuss about different types of cell-cell interactions
13. A. Define gene families and explain in detail about gene families with two examples
Or
B. What is cell cycle; explain the steps in cell cycle and its regulation

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VI TH SEMESTER
Elective cluster-602
BCT-603 Cluster Electives –VIII-B-II
GENETICS & ECOLOGY
MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF THE FOLLOWING

5X5=25MARKS

1. Incomplete dominance
2. Pleiotropism
3. Gene
4. Linkage
5. Chemical Mutagens
6. Haemophilia
7. Biodiversity
8. Food chain

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Explain about Mendel laws of Inheritance
Or
B. What is epistatic gene interaction, explain about dominant & recessive e
Epistatic interactions
10. A. Write an account on Eukaryotic chromosome organization
Or
B. Explain in brief about gene transfer mechanisms in bacteria
11. A. Define Mutation, discuss about different types of Mutations
Or
B. Write about DNA repair mechanisms
12. A. Explain about phenyl ketonuria and colour blindness
Or
B. Explain about Klinefelter syndrome, Turners' syndrome and Down's syndrome
13. A. Define Ecosystem, describe about producers, consumers and decomposers
Or
B. Explain in detail about Nitrogen cycle

Practical's :

Project work -50 marks:

1. Aim of the Project -5 marks
2. Introduction and Review of Books or Literature -5marks
3. Methodology -10 marks
4. Survey/ Data analysis/ hand written tables or diagrams -10 marks
5. Result analysis -5marks
6. Discussion and Conclusion of project work -5marks
7. Field work –Company/Organization/ MOU with certificate attached to the Research project -
10marks

Suggested Books

1. Brown TA. (2006). Gene Cloning and DNA Analysis.5th edition. Blackwell Publishing, Oxford, U.K.
2. Clark DP and Pazdernik NJ. (2009). Biotechnology-Appling the Genetic Revolution. Elsevier Academic Press, USA.
3. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington
4. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
5. Sambrook J, Fritsch EF and Maniatis T. (2001). Molecular Cloning-A Laboratory Manual.3rd edition. Cold Spring Harbor Laboratory Pres
6. Bhojwani, S.S. and Razdan 2004 Plant Tissue Culture and Practice.
7. Reinert, J. and Bajaj, Y.P.S. 1997 Applied and Fundamental Aspects of Plant Cell, Tissue and Organ Culture.Narosa Publishing House.
8. Butler, M. (2004). Animal cell culture and technology: The basics. II Edition. Bios scientific publishers.
9. Glick, B.R. and Pasternak, J.J. (2009). Molecular biotechnology- Principles and applications of recombinant DNA. IV Edition.ASM press, Washington, USA.
10. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007). Recombinant DNAGenes and genomes- A short course. III Edition. Freeman and Co., N.Y., USA.

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Elective cluster-BCT-602

Cluster Electives –VIII-B-III

APPLIED BIOCHEMISTRY

MODEL PAPER

TIME: 3HRS

MARKS: 75

SECTION-A

I. ANSWER ANY FIVE OF TH FOLLOWING

5X5=25MARKS

1. Foot printing
2. Antisense RNA
3. Organogenesis
4. Artificial seeds
5. Continuous cell lines
6. Parkinson's diseases
7. Edible vaccines
8. ISCOMS

II Answer the following question

10x5=50marks

Each question carries 10 marks and Internal Choice

9. A. Explain about DNA markers used in Genetic analysis
Or
B. Discuss about principle and application of Nanotechnology
10. A. Write about composition and preparation of plant tissue culture media
Or
B. Explain about somatic hybridization
11. A. Write about composition and preparation of Animal cell culture media
Or
B. Define gene therapy and add a note on types and applications of gene therapy
12. A. Give an account on stem cells
Or
B. Explain organogenesis through stem cells for transplantation
13. A. Define vaccination and classify the vaccines in to different types
Or
B. Give a detailed account on new generation vaccines

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Elective and Cluster
Practical Examination Guidelines
Marks evaluation procedure

Time: 3hrs

Marks: 50 marks

1. Major question (25 marks)

- ❖ Principle & Requirements – 7 marks
- ❖ Procedure, Tabular columns -5 marks
- ❖ Normal values, Graph, Discussion or Results – 3marks
- ❖ Work done Experiment -10

2. Minor Question (15 marks)

- ❖ Principle & Procedure -7 marks
- ❖ Procedure and Significance of experiment -8marks

3. Viva – 5 marks

- ❖ Oral or Written (Structure or Diagrams)

4. Record – 5marks

- ❖ Total No of experiments in syllabus
- ❖ Total No of experiment in record
- ❖ Signature of Internal and External examiners (Mandatory)