M.sc. (Medic Biote) sem - III (CBCS)

Sem III

ACHOLA – III (CBCS): SUMMER - 2016

SUBJECT: GENOMICS & PROTEOMICS

Day: Thursday
Date: 07-04-2016

Time: 2.00 P.M. To 5.00 P.M.
Max. Marks: 60

N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from each section.
2) Figures to the **RIGHT** indicate full marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.
4) Draw neat labeled diagram **WHEREVER** necessary.

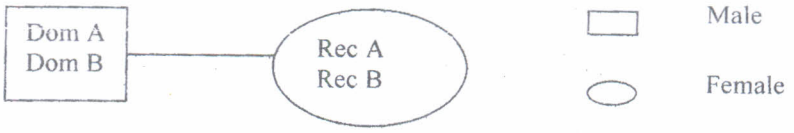
SECTION-I

Q.1 Define: (Any **FIVE**) **(10)**

a) STR
b) Map elements
c) Linkage map
d) Haldane mapping function
e) OMIM
f) Pseudogenes

Q.2 Answer the following: (Any **TWO**): **(10)**

a) How do you study the linkage between traits 'A' and 'B' in a given family?



Grandparent's phenotypes

b) Explain in brief transcript map.
c) With neat labeled diagram, explain chromosome structure.

Q.3 Differentiate between: (Any **TWO**): **(10)**

a) Radiation Hybrid map and Cytogenetic map.
b) STS and EST
c) Genomics and Transcriptomics

Q.4 **a)** Explain the applications of HGP. **(04)**

OR

Discuss the concept of gene order.

b) What is DNA microarray? **(03)**
c) Write a note on transposable elements. **(03)**

P. T. O.

SECTION-II

Q.5 Explain: (Any **FIVE**): **(10)**

a) COG
b) PSSM
c) MMDB
d) BLOCKS
e) Profile
f) CATH

Q.6 Answer the following: (Any **TWO**): **(10)**

a) Explain the concept of comparative genomics with one example.

b) Describe the SCOP principles of protein classification.

c) Enlist proteomics applications.

Q.7 Differentiate between : (Any **TWO**): **(10)**

a) C_n3D and Rasmol

b) Motif and Pattern

c) Cross and Intra species comparison

Q.8 **a)** Explain the concept of class and domain. **(04)**

OR

Explain in detail protein expression analysis?

b) Describe organ comparison concept. **(03)**

c) Describe any one plylogenetic analysis tool. **(03)**

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Msc (Medi Biotch) sem-IV (CBCS)
Sem-IV

ACHOLA – IV (CBCS) : SUMMER – 2016
SUBJECT : BIOMEDICAL WASTE AND ENVIRONMENT

Day : Monday
Date : 11-04-2016

Time : 2.00 P.M. To 5.00 P.M.
Max. Marks : **60**

N. B. :

1) **Q. No.1** and **Q.No.5** are **COMPULSORY**. Answer Any **TWO** from questions No. **2, 3** and **4** and from **6, 7** and **8**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the **SEPARATE** answer book.

SECTION – I

Q.1 Answer **any FIVE** of the following questions in brief **(10)**

a) What are biodegradable solids in BMW?
b) Discuss infectious pollutants in medical waste.
c) Justify, the cold as stress.
d) Explain the hospital acquired infections.
e) Describe the radioactive waste and its disposal
f) What are direct and indirect hazards?

Q.2 Answer the following questions : **(10)**

a) Describe mitigation of air pollution.
b) What is incineration and its impact on human health?

Q.3 Explain the following : **(10)**

a) Impact of hot water discharge on aquatic microbes.
b) Describe different categories of Biomedical waste?

Q.4 Write short notes on **any TWO** of the following : **(10)**

a) Composting of biodegradable BMW
b) Hydrolysis and acidogenesis
c) Thermophiles

SECTION - II

Q.5 Answer the following : **(10)**

a) Discuss segregation approach for management of BMW.
b) Describe the legislation and policies on health care waste management.

Q.6 Answer **any TWO** of the following : **(10)**

a) Write the basic steps involved in biological waste management.
b) Discuss the 3R principle with reference to biomedical waste.
c) Describe the disposal of hazardous waste.

Q.7 Write short notes on the following : **(10)**

a) Oxidation ponds
b) Secured land fill

Q.8 Answer the following : **(10)**

a) Describe the management of biodegradable solid waste by composting.
b) Discuss the methods for treatment of effluent from pathology laboratory.

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IV

Day: Wednesday

Time: 2·00 P.M. To 5·00 P.M.

Date: 13-04-2016

Max. Marks : 60

N.B.:

1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Answer **ANY TWO** questions from Section – I and **ANY TWO** from Section-II from the remaining questions.
2) Figures to the right indicate **FULL** marks.
3) Draw diagrams **WHEREVER** necessary.
4) Answer to both the sections should be written in the **SEPARATE** answer books.

SECTION-I

Q.1 Attempt any five of the following (10)

a) Define nanobiotechnology. Write two applications nanobiotechnology.
b) What are magnetic nanoparticles? Write two examples.
c) What is personalized medicine?
d) What is active targeting?
e) What are quantum dots? Write two application of quantum dots
f) What are carbon nanotubes?

Q.2 Explain the following (10)

a) Site specific delivery of chemotherapeutic agents using nanoparticles
b) Anti-AIDS nano drugs

Q.3 Explain the use of the following in nanotechnology (10)

a) SEM
b) Photoluminescence microscopy

Q.4 Write short notes on characterization of nanoparticles using any two of the following (10)

a) FTIR Spectroscopy
b) Particle size analysis
c) Confocal microscopy

SECTION-II

Q.5 Attempt the following questions (10)

a) Write in detail the concept and structure of Lab on a Chip
b) Write a detail account of DNA based biosensors

Q.6 Write short note on ANY TWO of the following (10)

a) Optical nanosensors
b) DNA based biosensors

Q.7 Explain working of the following (10)

a) Electrochemical biosensors
b) Enzyme based biosensors

Q.8 Describe the applications of the following (10)

a) Nanobiotechnology in Gene therapy

OR

b) Mass and acoustic biosensors in nanomedicine