

Molecular Diagnostics

Q.P. Code:

2 ½ Hours

VCD 10/10/2019 54BSC(BT) SEM IV ATKJT Choice Based.

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

Q 1 Do as directed (Any fifteen)

15

1. What is CTAB
2. Define restriction endonuclease.
3. What is the role of primary and secondary antibody in western hybridization
4. What is the role of phenol in DNA extraction?
5. Difference between probe and primer.
6. Write the name of any one method utilized in protein purification.
7. Define personalized medicine.
8. What is random hexamer primer.
9. What is oligo dT primer?
10. Basic difference between PCR and qRT – PCR.
11. What is the full form of LCR?
12. What are the three different temperatures used in PCR reaction.
13. What are psoralens
14. What is hot starts PCR.
15. Write down the full form of RFLP.
16. What is genetic counselling
17. Any one symptom of sickle cell anaemia
18. What do you mean by case study?
19. Name any one method to diagnose neisseria infection.
20. What is molecular diagnostics?

Q. 2 A Elaborate the commercializing of molecular diagnostics. 08

Q. 2 B Describe personalized medicine and theronastics. 07

OR

Q. 2 C Mechanism of northern blotting and northern hybridization. 08

Q. 2 D Write about the electrophoretic techniques to detect DNA and proteins. 07

Q. 3 A Write about the components of a typical PCR reaction. 08

Q. 3 B What are the essential features to be checked while designing a primer. 07

OR

Q. 3 C Write about the detection of PCR amplicons. 08

Q. 3 D Elaborate the process of RT-PCR. 07

Q. 4 A Using RFLP technique how you will detect sickle cell anaemia. 08

Q. 4 B Write about the molecular testing of neisseria 07

OR

Q. 4 C Write one case study of carrier testing. 08

Q. 4 D What are the ethical, legal and social issues of genetic testing. 07

Q. 5 Write Short notes on **any three** of the following 15

a. A short note on FISH.

b. Principle of ligase chain reaction.

c. What is molecular diagnostics and its role in post genomic era.

d. Clinical application of probes.

e. A short note on personalized medicine.
