

- (c) How does a vaccine mimic pathogen and elicit immune response? Briefly discuss history of vaccination and contributions of Edward Jenner. (6)
5. (a) Briefly describe cellular and molecular levels of organization of cells, tissues and organs in our body. (5)
- (b) What is Mendel's Law of segregation? Why did he choose pea plants for his experiment? (5)
- (c) What are the different classes of restriction enzymes? Briefly discuss each class with appropriate example. Explain their role in molecular cloning. (6)
6. Write short note on any **four** : (4×4=16)
- (i) Theory of Biogenesis
 - (ii) SARS-CoV2 vaccines
 - (iii) Levene's tetranucleotide hypothesis
 - (iv) Magic bullets
 - (v) Compound Microscope

(500)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6033 **H**

Unique Paper Code : 3184001002

Name of the Paper : Landmark Discoveries in Science

Name of the Course : **B.Sc. (Hons.) Biomedical Science**

Semester : II

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Question No. 1 is compulsory.
4. Give illustrations and examples wherever required.
5. Subparts of the questions should be attempted together.

1. (a) Define any **five** (2×5=10)
 - (i) Reverse transcriptase
 - (ii) A-DNA
 - (iii) Vaccine
 - (iv) Flea glasses

P.T.O.

- (v) Mithridatism
(vi) Transformation
- (b) Give the contribution of any five scientists in the field of Biology. (2×5=10)
- (i) Marie Curie
(ii) Baltimore
(iii) Aristotle
(iv) Marcello Malpighi
(v) Beadle and Tautam
(vi) Louis Pasteur
- (c) Match the following scientists with their discovery (any six) (1×6=6)
- | | |
|------------------------|-----------------------------------|
| (i) Alexander Flemming | (a) Tubercle Bacillus |
| (ii) Joseph Lister | (b) Penicillin |
| (iii) Edward Jenner | (c) Antiseptic |
| (iv) Rosalind Franklin | (d) Vaccine for small pox |
| (v) Robert Koch | (e) Discovery of double helix DNA |
| (vi) Robert hook | (f) Discovery of proteins |
| (vii) Linus Pauling | (g) Discover of Cell |

2. (a) What is foldscope? How it is different from compound microscope? (5)
- (b) Give an account of Watson and Crick model of DNA. (5)
- (c) Reverse transcriptase is an important enzyme used for in vitro synthesis of DNA from a RNA strand. Discuss with suitable illustration. (6)
3. (a) Briefly discuss the mechanism of action of any antimicrobial agent. (5)
- (b) What is Hershey and Chase experiment? How did they differentiate between DNA and protein in the experiment? (5)
- (c) What is Koch's postulates and how it helps in establishing relationship between host and pathogen? (6)
4. (a) Discuss various theory related to origin of life. (5)
- (b) Discuss the contribution any one Indian scientist in the field of biology. Briefly highlight their work with diagrams. (5)