

This question paper contains 4 printed pages]

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S. No. of Question Paper : 7876

Unique Paper Code : 2493010013

Name of the Paper : Molecular Basis of Infectious Diseases

Name of the Course : B.Sc. (Hons.) Biochemistry

Semester : VIII

Duration : 2 Hours

Maximum Marks : 60

(Write your Roll No. on the top immediately on receipt of this question paper.)

There are 6 questions.

Attempt 4 questions in all. All questions carry equal marks.

Question No. 1 is compulsory.

1. (a) Give reasoning for the following :

- (i) Bats are reservoirs of various viral diseases
- (ii) ID50 dose for some bacteria is low and for some it is very high
- (iii) New emerging diseases are majorly zoonotic
- (iv) Candidiasis is common in AIDS patients
- (v) Rabies can be prevented by vaccination.

P.T.O.

(b) Define the following terms :

(i) Recrudescence

(ii) Dimorphic fungi

(iii) Pathogenicity island

(iv) Nosocomial infection

(v) Tetanospasmin.

10,5

2. Answer the following questions :

(i) There are various immunological tests for tuberculosis. Describe any *two*.

(ii) Describe the various virulent factors of *Salmonella typhi*.

(iii) Which antigenic proteins are first detected during HIV infection ? What is their significance in diagnosis ?

(iv) How are parasitic diseases historically diagnosed ? Describe Montenegro test.

(v) What are Koch's postulates ?

15

3. (a) Describe the drugs used in the DOTS therapy. What is MDR-TB and XDR-TB ?

(b) What is HAART ? How can AIDS be cured completely ?

(c) Draw the structure of influenza virus. What are the functions of hemagglutinin and neuraminidase ?

15

4. Differentiate between the following :

(a) Antigenic shift and antigenic drift

(b) Bactericidal and bacteriostatic antibiotics

(c) Hepatitis A and hepatitis B

(d) Oral and injectable polio vaccine

(e) Passive and active immunization

15

5. (a) How was the BCG vaccine developed ? Why is it ineffective in adulthood ?

(b) Most of the drugs are for the pathways or mechanisms exclusive to the pathogen. Explain by describing an antifungal, antibacterial, antiviral and antiparasitic drug.

(c) What is bioterrorism ?

5,8,2

6. (a) How is malaria transmitted ? Describe various developmental stages of malarial parasite. Why is there periodic fever in malarial infection ?
- (b) What are the *three* types of leishmaniasis ? How are amastigotes different from promastigotes ?
- (c) What are the various biosafety levels ? Discuss with examples. 15