

Please check whether you have got the right question paper.

N.B. (1) Attempt all questions.

(2) Draw labeled diagrams wherever necessary

Q1.A. Define the following terms

- i. Zoonotic infection
- ii. Fluorochrome
- iii. Parasitism
- iv. Herd immunity
- v. Mycorrhizae

(05)

B. State whether the given statement is true or false:

- i. Commensalism is a unidirectional association.
- ii. Ability of a pathogen to cause a disease is called virulence.
- iii. Scintillator is used in colorimeter.
- iv. In electron microscope, electro-magnetic lens are used for focusing an image.
- v. Nosocomial infections are hospital acquired infections.

(05)

C. Give one example for each of the following:

- i. Mutualism
- ii. Fulminating infection
- iii. Normal flora organism found in large intestine.
- iv. Physical barrier in defense mechanism.
- v. Fungal phytopathogen.

(05)

D. Select the correct alternative and rewrite the statements:

- i. Rhizobium is a _____ type of bacteria. [symbiotic, parasitic, predator]
- ii. Calomel electrode has a solution of _____ in it. [KCl, HCl, AgCl₂]
- iii. HEPA filter is used in _____ [pH meter, colorimeter, biosafety cabinet]
- iv. _____ is not a phagocytic cell. [Neutrophil, Eosinophil, Monocyte]
- v. _____ is an example of a virulence factor. [Hemolysin, Amylase, Lysozyme]

(05)

Q. 2. Answer briefly any two of the following:

- i. With the help of a suitable diagram explain the components of a colorimeter.
- ii. Discuss syntrophism and amensalism.
- iii. Describe with suitable examples how microorganisms adhere to tissues for initiating an infection.

(20)

Q.3.A. Answer briefly any three of the following:

(18)

- i. Write short note on rumen microbiota.
- ii. What is phyllosphere? How have microorganisms adapted themselves in it?
- iii. What happens when microorganisms come in contact with the human body?
- iv. What are Gnotobiotic studies? Give two contributions of it.
- v. Explain the role of organisms in Rhizosphere.
- vi. What are endophytes? Explain their benefits to plants.

B. Do as directed

(02)

- i. What is bacteriocin?
- ii. What are opportunistic pathogens?

Q.4. A. Answer briefly any three of the following:

(18)

- i. Discuss the factors that prevent microbes from colonizing the digestive tract.
- ii. Discuss the significance of phagocytosis and inflammation as second line of defense.
- iii. What different factors and procedures compromise a hosts' resistance mechanism?
- iv. Discuss species and natural resistance of host.
- v. Discuss the lacrimal apparatus and its significance in first line of defense.
- vi. Schematically explain the third line of defense. When does it come into play and what does it offer to the host?

B. Do as directed

(02)

- i. What do you mean by "Pandemic"?
- ii. State the function of urine in host defense.

Q.5. A. Answer briefly any three of the following:

(18)

- i. How would you prepare specimen by Shadow casting?
- ii. Explain the working of Glass electrode.
- iii. What are walk-in incubators? Give four applications.
- iv. How would you operate an autoclave?
- v. Explain the features and use of Laminar Air Flow cabinet.
- vi. Explain the working of SEM.

B. Answer each of the following:

(02)

- i. Which type of light is used in fluorescent microscope to illuminate the specimen?
- ii. Give the name of biological indicator used to check efficiency of an autoclave.