B.Sc. (Hons.) Semester- VI Examination,2022
Subject- Biotechnology (Hons.)

Paper- DSE-3 (Medical Microbiology)

Time- 2hrs **FM-40**

Q. 1. Answer *any five* from the following: 2 x 5 = 10

a. Define neurotoxin. Name one bacteria producing neurotoxin.
b. *S. aureus* is coagulase positive, true or false? What is the function of coagulase enzyme?
c. Define portal of entry. Give one example.
d. What are rose spots? Name the disease associated with it.
e. Differentiate between bacteremia and septicemia.
f. What is oral thrush? Name the causative agent.
g. Define vaccine. Give one example.
h. What are retroviruses? Mention one unique character of retroviruses.

Q. 2. Answer *any two* from the following: 5 x 2 = 10

a. Write briefly on the pathogenesis of Hepatitis B infection. Mention the prophylaxis for the same. 4+1=5
b. Discuss the symptoms and preventive measures of syphilis. How can it be diagnosed? 4+1=5
c. Name the causative agent of diphtheria. Discuss in brief the pathogenesis and symptoms of diphtheria. 1+4=5
d. Describe the pathogenesis and symptoms of tuberculosis. Mention its therapeutic treatment. 4+1

Q3. Answer *any two* from the following: 10 x 2 = 20

a. Name the causative agent of AIDS. How can it be transmitted? Discuss the various stages of AIDS. Mention the control and treatment strategies. 1+2+4+3=10
b. Describe the normal flora of gastrointestinal tract and genitourinary tract in humans. Differentiate between community acquired infection and nosocomial infection. Define a reservoir of infection, citing one example. What are fomites? 5+2+2+1=10
c. Write a short note on candidiasis. Write the prophylactic measure of this disease.5+5=10
d. Which bacterium is responsible for typhoid? Write down the mode of transmission, symptoms and prophylaxis of typhoid.1+(3x3)=10

OR

B.Sc. (Hons.) Semester-VI Examination, 2022

Subject: Biotechnology (Hons.)

Paper: DSE-3 (OR) [Environmental Biotechnology]

Time: 2 hrs **FM: 40**

1. **Answer *any eight* of the followings:** 2x5 = 10

a) What are the toxic gases generated during burning of firewood ?

b) Define anaerobic digestion.

c) Which algae is mostly used for hydrogen production ?

d) What are the harmful effects of gasoline?

e) Write down the name of two lignin degrading micro-organism.

.f) Mention two differences between BOD and COD.

g) Define symbiotic nitrogen fixation.

h) What do you mean by microbial mining?

2. Answer *any two* of the followings: 5x2=10

a) Stubble burning leads to a major air pollution-Explain.

b) Write down the role of methanogenic bacteria towards formation of methane from paddy filed.

c) Explain how alcohol can be synthesised form sugar.

d) Explain the role of metal hyperaccumulator plant towards bioremediation of heavy metals.

3. **Answer *any two* of the followings:** 10x2=10

a) i)Write down the role of soil bacteria towards degradation of petroleum products.

ii) Explain how bacteria destroy chemical pesticide in soil. 5+5 = 10

b) i) Explain how municipal solid waste used for production of fertilizer.

ii) Write down the role of *Azolla* as biofertilizer. 5+5 = 10

c) Explain the different methods of bioleaching of metals

d) Write down the role of environmental significance of genetically modified microbes with suitable example.