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Question Paper Code: U4B05

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Biomedical Engineering

21UBM405- PATHOLOGY AND MICROBIOLOGY

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Compare Hemostasis and Homeostasis. CO1-U
2. How will you find out platelet activation during hemostasis? CO1-U
3. Differentiate bleeding time and clotting time. CO1-U
4. Write notes on Disseminated intravascular coagulation. CO1-U
5. List some of the disease caused by protozoans. CO1-U
6. How will you identify the organism is having cytochrome-c enzyme? CO1-U
7. Define DNA repair. CO1-U
8. State the advantages of microbial genomics. CO1-U
9. Write the difference between natural and artificial immunity. CO1-U
10. State the importance of Phagocytosis. CO1-U

PART – B (5 x 16= 80 Marks)

11. (a) (i) What is cellular adaptation? Explain in brief the mechanism of cellular adaptation. CO1-U (8)
 - (ii) Illustrate the tissue repair mechanism with an example using soft tissue. CO1-U (8)
- Or
- (b) (i) Explain the process involved in biopsy. CO1-U (8)
 - (ii) Discuss in brief the various types of tumors. CO1-U (8)

12. (a) (i) Illustrate the events involved in thrombosis. CO1-U (10)
(ii) What are the consequences of pulmonary embolism? CO1-U (6)
Or
- (b) Elaborate on different types of hematological disorders. CO1-U (16)
13. (a) Explain the morphology and structural organization of the different CO1-U (16)
types of bacteria with necessary illustrations.
Or
- (b) Explain the various sterilization techniques for proficient growth of CO1-U (16)
organism in the culture media.
14. (a) Explain the working principle of SEM and TEM with a neat labeled CO1-U (16)
diagram.
Or
- (b) Explain the methods of gram staining and acid fast staining in CO1-U (16)
detail.
15. (a) (i) Explain with neat diagram about Antigen and antibody CO1-U (8)
reactions.
(ii) What is the cause of immune deficiency syndrome? Explain the CO1-U (8)
same in brief.
Or
- (b) (i) Discuss in brief about substitute antibodies and give their CO1-U (8)
advantages.
(ii) Brief about the defense mechanism of immune system. CO1-U (8)