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Total Number of Pages : 2

AR-18

B.TECH

B.TECH 3rd SEMESTER EXAMINATIONS, NOV/DEC 2019
BBTPC3030 MICROBIOLOGY

Common to BIOTECH

Time : 3 Hours

Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer All Questions

- a Which of the following is the most accurate method for microbial assay of antibiotics?----- CO1PO1
 a) Physical assay
 b) Chemical assay
 c) Biological assay
 d) Chemical and biological assay
- b The identification of bacteria by serologic tests is based on the presence of specific antigens. Which of the following bacterial components is least likely to contain useful antigens?----- CO1PO1
 a. Capsule
 b. Cell wall
 c. Flagella
 d. Ribosomes
- c Each of the following statements concerning the Gram stain is correct except: CO1PO1
 a. *Escherichia coli* stains pink because it has a thin peptidoglycan layer
 b. *Streptococcus pyogenes* stains blue because it has a thick peptidoglycan layer
 c. *Mycoplasma pneumoniae* is not visible in the Gram's stain because it does not have a cell wall
 d. *Mycobacterium tuberculosis* stains blue because it has a thick lipid layer
- d Each of the following organisms is an important cause of urinary tract infections except:----- CO2PO1

 a. *Klebsiella pneumoniae*
 b. *Escherichia coli*
 c. *Bacteriodes fragilis*
 d. *Proteus mirabilis*
- e Each of the following agents is a recognized cause of diarrhoea except ----- CO2PO1
 a. *Clostridium perfringens*
 b. *Vibrio cholerae*
 c. *Enterococcus faecalis*
 d. *Escherichia coli*
- f Each of the following statements about the classification of streptococci is correct except: ----- CO2PO1
 a. Pneumococci (*Streptococcus pneumoniae*) are alpha-hemolytic and can be serotyped on the basis of their polysaccharide capsule
 b. Enterococci are group D streptococci and can be classified by their ability to grow 6.5% sodium chloride
 c. Viridans streptococci are identified by Lancefield grouping, which is based on the C carbohydrate in the cell wall
 d. Although pneumococci and the viridans streptococci are alpha-hemolytic, they can be differentiated by the bile solubility test and their susceptibility to optochin
- g Which of the following disease is best diagnosed by serologic means?----- CO3PO1
 a. Pulmonary tuberculosis
 b. Gonorrhoea
 c. Actinomycosis
 d. Q Fever
- h The coagulase test is used to differentiate ----- CO3PO1



- a. *Staphylococcus epidermidis* from *Neisseria meningitidis*
 b. *Staphylococcus aureus* from *Staphylococcus epidermidis*
 c. *Streptococcus pyogenes* from *Staphylococcus aureus*
 d. *Streptococcus pyogenes* from *Enterococcus faecalis*
- i Peptidoglycan layer is present in large quantity in? ----- CO4PO1
 a) Gram-positive bacteria
 b) Gram-negative bacteria
 c) Fungi
 d) Algae
- j Which among the following acts as receptors for bacteriophage attachment in Gram-negative bacteria? -- CO4PO1
 a) Cilia b) O antigens c) Lipid A d) Teichoic acid

PART – B: (Short Answer Questions) 10X2=20 Marks**Q.2. Answer ALL questions**

- a Define Strain? CO1PO1
 b What are Fimbriae? CO1PO1
 c What is Microcapsule? CO1PO1
 d What do you mean by competency factors? CO2PO1
 e What do you mean by Nucleus? CO2PO1
 f What are Broth cultures? CO2PO1
 g What is Colony? CO3PO1
 h What are Organotrophs? CO3PO1
 i What do you mean by Facultative anaerobes? CO4PO1
 j What is Fragmentation? CO4PO1

PART – C: (Long Answer Questions) 4X15=60 Marks**Answer ALL questions****Q.3**

- a What is mutation? Explain about types and mechanism of mutation? 8 CO1PO2
 b Physical conditions required for growth in bacteria 7 CO1PO2
 OR
 c Describe about Different types of Reproduction in bacteria 8 CO1PO2
 d Explain growth curve in bacteria? 7 CO1PO2

Q.4

- a Explain about nuclear material in bacteria? 5 CO2PO2
 b Give the detailed information about Nutritional Types of Bacteria 10 CO2PO2
 OR
 c Explain about selective methods in Isolation of Bacteria? 10 CO2PO2
 d What are Pure cultures? 5 CO2PO2

Q.5

- a Describe about Life cycle in Malaria? 8 CO3PO2
 b Methods for maintaining and Preservation of Pure cultures? 7 CO3PO2
 OR
 c Cultural Characteristics in Bacteria? 7 CO3PO2
 d Different Methods for Isolating Pure Cultures? 8 CO3PO2

Q.6

- a Explain Microbiology of Air? 7 CO4PO2
 b Describe about Antibiotic classification on the basis of Microbial origin? 8 CO4PO2
 OR
 c Discuss about Microbiology of water? 7 CO4PO2
 d Types of microbes associated with food spoilage? 8 CO4PO2