Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Science
End Sem Examination May-2024
BT3CO05 Microbiology

Programme: B.Sc. Branch/Specialisation: Biotechnology

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. Which of the following is correct statement? **1**
(a) Bacteria is eukaryotic microorganism
(b) Bacteria is multi-cellular microorganism
(c) Bacteria contain nucleus in their cytoplasm
(d) Bacteria contain plasmid in their cytoplasm

ii. The first antibiotic discovered was _____. **1**
(a) Amphicillin (b) Zentamycin
(c) Penicillin (d) Bacitracin

iii. Which of the following is acidic stain? **1**
(a) Congo red (b) Saffranine
(c) Crystal violet (d) Methyl red

iv. Which of the following chemical used as mordant in the Grams staining? **1**
(a) Saffranine (b) HCl (c) Alcohol (d) Gram's Iodine

v. MacConkey is _____. **1**
(a) Selective media (b) Complex media
(c) Natural Media (d) Enrich media

vi. Full form of SPC is _____. **1**
(a) Standard Pollution Count (b) Specific Plate Count
(c) Standard Plate Count (d) None of these

vii. Reproduction in yeast occurs by _____. **1**
(a) Binary fission (b) Fragmentation
(c) Budding (d) All of these

viii. Lichen is symbiotic association between _____. **1**
(a) Plant and algae (b) Bacteria and fungi
(c) Algae and fungi (d) Fungi and plant roots

ix. Lytic cycle occurs in _____. **1**
(a) Viruses (b) Bacteria (c) Fungi (d) Plants

x. Prions are made-up of _____. **1**
(a) Only RNA (b) Only proteins
(c) Protein and nucleic acid (d) Only nucleic acid

Q.2 i. Write the general characteristics of bacteria. **2**
ii. Write the contributions of Louis Pasture. **3**
iii. Describe Whittaker 5 kingdom classification of bacteria. **5**
OR iv. Explain Corl Woese's classification of bacteria. **5**

Q.3 i. Define pasteurization. **2**
ii. Write a detailed note on physical methods of sterilization. **8**
OR iii. Explain the mechanisms of Gram's and Acid-fast staining. **8**

Q.4 i. Explain synchronous growth. **3**
ii. Give a detailed account of microbiological media and their types. **7**
OR iii. Write in detail on methods of microbial growth measurement. **7**

Q.5 i. Explain morphology of *Penicillium and Rhizopus.* **4**
ii. Write the general characteristics of Lichens and Mycorrhiza. **6**
OR iii. Write a detailed note on classification of algae. **6**

Q.6 Attempt any two:
i. Explain the procedure of bacteriophage detection assay. **5**
ii. Explain lytic and lysogenic cycle of bacteriophages. **5**
iii. Write a note on classification of viruses. **5**

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Marking Scheme

Microbiology (T) - BT3CO05 (T)

Q.1	i)	d)Bacteria contain plasmid in their cytoplasm	**1**
	ii)	c)Penicillin	**1**
	iii)	a)Congo red	**1**
	iv)	d)Gram's Iodine	**1**
	v)	a)Selective media	**1**
	vi)	c) Standard Plate Count	**1**
	vii)	c) Budding	**1**
	viii)	c)Algae and fungi	**1**
	ix)	a)Viruses	**1**
	x)	b)Only proteins	**1**

Q.2	i.	General characteristics of bacteria -2 marks	**2**
	ii.	Contributions of Louis Pasture 3 contributions – 1 mark for each	**3**
	iii.	Whittaker 5 kingdom classification- Name of classes -2 marks Description with example -3 marks	**5**
OR	iv.	Corl Woese's classification- Name of classes -2 marks Description with example -3 marks	**5**

Q.3	i.	Definition of pasteurization. 2 Marks	**2**
	ii.	Physical methods of sterilization 4 method with principle – 2 marks for each method	**8**
OR	iii.	Mechanisms of Gram's – 4 marks Mechanisms of Acid fast staining- 4 marks	**8**

Q.4	i.	Synchronous growth- Defination -2 marks Diagram -1 Mark	**3**
	ii.	Microbiological media – 2 Marks Types with example 5 marks	**7 Marks**
OR	iii.	Microbial growth measurement Direct Methods -5 Marks Indirect methods -2 marks	**7**

Q.5	i.	Morphology of *Penicillium- 2 marks* *Rhizopus* – 2 marks	**4**
	ii.	General characteristics of Lichens- 3 marks General characteristics of Mycorrhiza.- 3 marks	**6**
OR	iii.	Classification of algae with examples 6 marks	**6**

Q.6

	i.	Procedure of bacteriophage detection assay 3 marks Diagram tic representation – 2 marks	**5**
	ii.	Lytic cycle -2.5 lysogenic cycle – 2.5	**5**
	iii.	Classification of viruses with examples 5	**5**

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