

QP CODE: 24900178



Reg No:.....

Name:.....

MAHATMA GANDHI UNIVERSITY, KOTTAYAM
FIRST SEMESTER MGU-UGP (HONOURS) REGULAR
EXAMINATION NOVEMBER 2024

First Semester

Discipline Specific Core Course - MG1DSCMBG101 - WONDERS OF THE
MICROBIAL WORLD

(2024 ADMISSION ONWARDS)

Duration: 1.5 Hours

Maximum Marks: 50

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Interest (I),
Appreciation (Ap), and Skill (S)**

*Students should attempt atleast one question from each course outcome to enhance their overall
outcome attainability.*

[Learning Domain][CO No(s)]

Part A

Multiple Choice Questions

Answer all questions

Each carries 1 mark

- 1 Name the binomial of brewer's yeast [K] [1]
a) Saccharomyces carlsbergensis b) Saccharomyces cerevisiae
c) Saccharomyces mellis d) Saccharomyces ellipsoideus
- 2 Select the symbiotic nitrogen fixing bacteria [K] [1]
a) Pseudomonas b) Rhizobium
c) Azotobacter d) Clostridium
- 3 Name the Father of Immunology [U] [1]
a) Robert Koch b) Edward Jenner
c) Francesco Redi d) Louis Pasteur
- 4 What is the refractive index of immersion oil? [K] [2]

- a) 1 b) 1.5
c) 2 d) 2.5

5 Which of the following method is used to demonstrate motility in bacteria? [K] [2]
a) Hanging drop method b) Wet mount
c) Simple staining d) Differential staining

6 What is the primary function of glycocalyx in bacteria? [K] [3]
a) Energy storage b) Protection and adherence
c) DNA replication d) Protein synthesis

7 Select the shape of *Vibrio cholerae* from the following. [K] [3]
a) rod b) spherical
c) half spiral d) filamentous

8 Select the major two components of peptidoglycan [A] [3]
a) N-acetylglucosamine and N-acetylmuramic acid b) Amino acids and lipids
c) Ribose and deoxyribose d) Glucose and fructose

9 Name the control organism used for checking the efficiency of autoclave. [K] [4]
a) *Clostridium tetani* b) *Staphylococcus aureus*
c) *Bacillus stearothermophilus* d) *E. coli*

10 Which of the following is not a part of hot air oven? [A] [4]
a) Pressure gauge b) Heating coil
c) Perforated tray d) Air circulating fan

(5 × 1 = 5)

Part C

State Whether True Or False

Answer all questions

Each question carries 1 mark

- | | | | |
|----|---|-----|-----|
| 16 | Virus reproduce by binary fission. | [A] | [3] |
| 17 | Membrane filters are used for sterilization. | [K] | [4] |
| 18 | Bacteristatic agents kills bacteria. | [K] | [4] |
| 19 | Bacillus thuringiensis is widely used in agricuture as a biofertilizer. | [U] | [1] |
| 20 | In a light microscope, the specimen appears dark against a bright background. | [U] | [2] |

(5 × 1 = 5)

Part D

Very Short Answer Type Questions

Answer any 10 questions

Each question carries 1 mark

- | | | | |
|----|--|-----|-----|
| 21 | What is the primary end product of fermentation by yeast? | [U] | [1] |
| 22 | Name a probiotic food prepared from milk | [U] | [1] |
| 23 | Name two antibiotics produced by microorganisms | [K] | [1] |
| 24 | What is magnification in microscopy? | [U] | [2] |
| 25 | Why is oil used with immersion objectives? | [K] | [2] |
| 26 | What is the illumination source used in a fluorescence microscope? | [K] | [2] |
| 27 | What is the mode of action of dry heat on microorganisms? | [U] | [4] |
| 28 | Explain the microscopic morphology of streptococci. | [U] | [3] |
| 29 | Name a bacteria that lack cell wall. | [K] | [3] |
| 30 | Explain the role of outer membrane in bacteria. | [K] | [3] |
| 31 | What are porins? | [K] | [3] |
| 32 | What are Seitz filters? | [K] | [4] |

(10 × 1 = 10)

Part E

Short Answer Type Questions

Answer any 4 questions

Each question carries 3 marks

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|----|---|-----|-----|
| 33 | Discuss the role of microorganisms in bioleaching and bioremediation | [K] | [1] |
| 34 | What challenges and limitations have scientists faced in establishing the origin of life in relation to biogenesis? | [U] | [1] |
| 35 | Discuss the components of a bright field microscope and their roles in image formation | [U] | [2] |
| 36 | Summarize on antifungal agents. | [U] | [4] |
| 37 | Briefly explain disc diffusion method. | [U] | [4] |
| 38 | Outline the steps involved in fungal cultivation. | [U] | [3] |

(4 × 3 = 12)

Part F

Long Answer Type Questions

Answer any 1 question

The question carries 8 marks

- | | | | |
|----|--|------|-----|
| 39 | Analyse the intra-cytoplasmic features of a bacterial cell | [An] | [3] |
| 40 | What is Zeihl Neeelsen staining? Explain the principle and procedure | [U] | [2] |

(1 × 8 = 8)

END OF THE QUESTION PAPER
