ZIAUDDIN UNIVERSITY EXAMINATION BOARD

Total Time 3 hours
Total Marks: 100

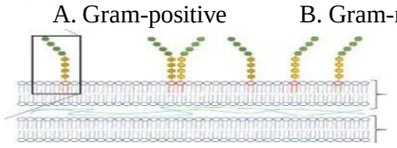
Class: XI **MODEL PAPER EXAMINATION 2026**
Time Allowed: 20 minutes **SUBJECT: MICROBIOLOGY**
Q1: **SECTION "A"** **Marks: 16**

Note: Attempt **ALL** questions from this section. Each question carries **ONE** mark.

1. Microorganisms which cause any infectious disease are known as
A. Parasites B. Pathogens C. Algae D. Spores
2. The method of Pasteurization was discovered by:
A. Robert Boyle B. Rosalind Franklin C. Louis Pasteur D. Theodor Sachwann
3. This can be stored for a long time, provided that they were properly made
A. Permanent slide B. Temporary slide C. Open slide D. All of the above
4. Which oil is used with oil immersion objective lens to magnify the image.
A. Blackseed oil B. Argon oil C. Camomile oil D. Cedar wood oil
5. Which bacterial shape is characterized by a spherical or round morphology?
A. Bacillus B. Spirillum C. Coccus D. Vibrio
6. What is the term for bacteria that form pairs after cell division?
A. Tetrads B. Staphylococci C. Diplococci D. Streptococci
7. Which structure contributes to the motility of some bacteria, aiding in their movement?
A. Capsule B. Pili C. Flagella D. Spore
8. What is the main mode of action of antibiotics that target bacterial cell walls?
A. Inhibition of protein synthesis B. Disruption of cell membrane
C. Inhibition of cell wall synthesis D. Interference with DNA replication
9. Which of the following is a Gram-negative bacterium?
A. Staphylococcus aureus B. Escherichia coli
C. Streptococcus pyogenes D. Clostridium perfringens
10. What is the primary function of the endospore in bacterial cells?
A. Reproduction B. Protection during unfavorable conditions
C. Facilitating genetic recombination D. Energy storage
11. Which of the following is a common method for sterilizing heat-sensitive solutions?
A. Autoclaving B. Pasteurization C. Filtration D. Incineration
12. What is the purpose of a mordant in staining procedures?
A. Stabilize the stain B. Increase staining time C. Remove excess stain D. Enhance contrast
13. Which gas is often added to anaerobic culture systems to create an oxygen-free environment for anaerobic bacteria?
A. Nitrogen B. Carbon dioxide C. Hydrogen D. Argon
14. What is the primary characteristic of capnophiles?
A. Grow in low pH B. Grow at high temperatures
C. Require high salt concentrations D. Thrive in elevated CO2 levels
15. Which of the following is an example of a selective medium?
A. Nutrient agar B. Mannitol salt agar C. Blood agar D. MacConkey agar
16. Which hepatitis virus is primarily transmitted through contaminated food or water?
A. Hepatitis A virus B. Hepatitis B virus C. Hepatitis C virus D. Hepatitis D virus

Practical Based Assessment (PBA) Marks: 16

17. What is the theoretical limit of resolution in light microscopy primarily determined by?
A. Wavelength of light B. Numerical aperture of the objective lens
C. Thickness of the specimen D. Magnification power
18. In microscopy, what does the term "amplitude" refer to?
A. Magnification power B. Intensity of light
C. Thickness of the specimen D. Resolution limit
19. What is the primary advantage of using immersion oil with high numerical aperture objectives?
A. Increased resolution B. Decreased magnification
C. Reduced contrast D. Extended depth of field
20. Which of the following microscope types uses electrons instead of light for imaging?
A. Brightfield microscope B. Phase-contrast microscope
C. Transmission electron microscope D. Confocal microscope
21. What happens to the image in a compound microscope when using higher magnification objectives?
A. Increased brightness B. Decreased resolution
C. Improved depth of field D. Reduced field of view
22. What is the purpose of a diaphragm in a light microscope?
A. Holds the objective lenses B. Focuses the specimen
C. Adjusts the intensity of light D. Magnify the image
24. Lipopolysaccharide is found in the cell wall of:
A. Gram-positive B. Gram-negative C. Both D. Fungi



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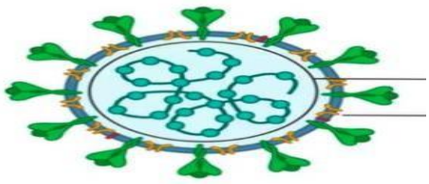
25. The protein coat of viruses that encloses the genetic material is called:

A. Virion B. Capsid C. Peplomers D. Capsomers



END OF SECTION A

Class: XI **MODEL PAPER EXAMINATION 2026**
Time: 2 hours 40 minutes **SUBJECT: MICROBIOLOGY SECTION "B" AND SECTION "C"** **Total Marks 68**
Q2: **SECTION "B" SHORT ANSWER QUESTIONS** **36 Marks**

Note: Answer any **NINE** questions from this section. All questions carry equal marks.

(i) Elaborate the scope of microbiology in the modern era.
(ii) Define microscopy. What are the different methods of microscopy?
(iii) List down the names of stains used for the identification of Gram positive, gram negative bacteria, spores, and fungi.
(iv) What is the principle and mechanism of Autoclave machine?
(v) How can you identify bacteria on the basis of oxygen requirement?
(vi) Elucidate various types of positive staining methods.
(vii) What are the methods of Pasteurization?
(viii) Explain any TWO types of culture medium.
(ix) What are inorganic trace elements?
(x) How are antigenic characters used as a tool for identification of bacteria?
(xi) List down some common pathogens found in the following samples:
l. Blood ll. Urine lll. Stool lV. C.S.F
(xii) Mention any four antibiotics with their mode of action.
(xiii) What samples are collected for virus isolation?
(xiv) How are virus samples transported?

SECTION "C" DETAILED ANSWER QUESTIONS **32 Marks**

Note: Answer any **TWO** questions from this section. All questions carry equal marks. Your answer should not exceed 30 to 40 lines.

Q3. a. What phases are included during the bacterial growth? Elaborate.
b. What is the effect of pH on bacterial growth?
Q4. a. What are the qualities of a good antibiotic?
b. How is antibiotic susceptibility determined in the laboratory?
Q5. a. What are the laboratory diagnosis of viral infections?
b. What are the limitations of light microscope in virology?

END OF PAPER