

**B****DE-2926****B. Sc. (Microbiology) (Sem. I) Examination****March / April - 2016****MB - 01 : Fundamentals of Microbiology**

Time : Hours]

[Total Marks :

**સૂચના/Instructions :**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. Sc. (Microbiology) (Sem. I)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="MB-01 : Fundamentals of Microbiology"/>	<input type="text"/>
Subject Code No. : <input type="text" value="2"/> <input type="text" value="9"/> <input type="text" value="2"/> <input type="text" value="6"/>	Section No. (1, 2,.....) : <input type="text" value="NIL"/>
Student's Signature	

- (2) પ્રશ્ન પત્રમાં કુલ 50 પ્રશ્નો છે, બધાજ ફરજિયાત છે. દરેક પ્રશ્નનો (1) એક ગુણ છે.  
There are 50 questions, each question carries (1) mark and all are compulsory.
- (3) દરેક પ્રશ્નનો કાળજીપૂર્વક અભ્યાસ કરી સાચો વિકલ્પ પસંદ કરો.  
Read the question carefully before selecting the correct option.

***O.M.R. Sheet ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ O.M.R. Sheetની પાછળ છાપેલ છે.***

***Important instructions to fillup O.M.R. Sheet is given on back side of the provided O.M.R. Sheet.***

- 1 The in situ location of microorganisms in ecological niches like human gut can be examined under the microscope
  - (A) Phase contrast Microscope
  - (B) Confocal Scanning laser Microscope
  - (C) Transmission Electron microscope
  - (D) Scanning electron microscope
  
- 2 The topography of the bacterial surface flagella can be studied by
  - (A) Phase contrast Microscope
  - (B) Scanning Probe Microscopy
  - (C) Transmission Electron microscope
  - (D) Scanning electron microscope
  
- 3 In SEM secondary electrons entering the detector strikes the
  - (A) Glass slide
  - (B) Copper metal grid
  - (C) Electromagnetic lens
  - (D) Scintillator
  
- 4 Which microscope is used for the study of formation of biofilm on the surface of indwelling medical devices ?
  - (A) Dark field Microscope
  - (B) Scanning Probe Microscope
  - (C) Confocal scanning laser microscope
  - (D) Transmission Electron microscope
  
- 5 During Scanning Probe Microscopy the arrangement of atoms on the specimen surface is determined by
  - (A) light flow over the surface
  - (B) Bombardment of electrons over the surface
  - (C) Creating a phase over the surface
  - (D) Moving the probe tip back and forth over the surface

- 6 Scanning Tunneling Microscope can be used for the study of the object
- (A) Kept on radioactive probe
  - (B) Freeze by Freeze-etching method
  - (C) Immersed in water
  - (D) Immersed under cedar wood oil
- 7 Dye used for the differential count of blood is a type of
- (A) Leuco dye
  - (B) Acidic dye
  - (C) Basic dye
  - (D) Compound dye
- 8 Which one of the following is a basic dye ?
- (A) Neutral red
  - (B) Eosine
  - (C) Nigrosine
  - (D) Rose Bengal
- 9 The high lipid content of gram negative bacteria make them permeable to
- (A) Iodine
  - (B) Primary stain
  - (C) Counter stain
  - (D) Acetone
- 10 Which one of the following is used as mordant during Gram's statining
- (A) Safranine
  - (B) Crystal violet
  - (C) Iodine
  - (D) Alcohol

- 11 During Hiss's method for capsule staining which one of the following used as counter stain
- (A) Malachite green (B) Congo red  
(C) Safranin (D) 20% CuSO<sub>4</sub>
- 12 Chloroform is used during metachromatic granule staining to
- (A) Use as a decolorizer (B) Removes primary stain  
(C) Use as a mordant (D) Dissolves fat in bacteria
- 13 Which dye used to stain the endospore during Dorner's method ?
- (A) Methylene blue (B) ZNCF Stain  
(C) Nigrosine (D) Congo red
- 14 Stain use for negative staining is
- (A) Crystal violet (B) Nigrosine  
(C) Safranin (D) Methylene blue
- 15 pH of the solutions used in staining changes the bacterial surface
- (A) Solubility (B) Color  
(C) Electrical charge (D) Capillarity
- 16 Which one of the following is called "Color Intensifiers" ?
- (A) Synthetic dye (B) Chromophore  
(C) Auxochrome (D) Mordant
- 17 Which one of the following dye used as an Antiseptic ?
- (A) Safranin (B) Eosine  
(C) Methylene Blue (D) Crystal Violet
- 18 Study of fungi is called
- (A) Protozoology (B) Mycology  
(C) Phycology (D) Virology
- 19 Science concerned with exploration of life in outer space is recognized as
- (A) Applied Microbiology (B) Geochemical Microbiology  
(C) Exobiology (D) Aero Microbiology
- 20 "Magic bullet" first used for the treatment of African sleeping sickness was a dye called
- (A) Crystal Violet (B) Trypan  
(C) Sudan Black (D) Nigrosine

- 21 Algae together with the Cyanobacteria produces about  
(A) 35% of the planet Carbon  
(B) 75% of the planet oxygen  
(C) 50% of the planet oxygen  
(D) 25% of the earth's N<sub>2</sub>
- 22 Which one of the following is called unicellular animal like protists ?  
(A) Sponge  
(B) Spirogyra  
(C) Protozoa  
(D) Virus
- 23 Mycobacterium tuberculosis was discovered by  
(A) Chatton  
(B) Bassi  
(C) Robert Koch  
(D) Wasserman
- 24 In 1786 first classification of bacteria was introduced by  
(A) Van Niel  
(B) Domagk  
(C) Carl Woese,  
(D) Miller
- 25 Blood Groups were discovered by  
(A) Griffith  
(B) Wright  
(C) Landsteiner  
(D) Fleming
- 26 Agostino Bassi first showed that  
(A) Disease was caused by protozoa  
(B) Rust fungi caused cereal crop disease  
(C) A microorganism could cause disease  
(D) A potato blight was caused by a mold
- 27 Use of Agar as a solidifying agent was suggested by  
(A) Ferdinand Cohn  
(B) Fannie Eilshemius and Walther Hesse  
(C) Charles Chamberland  
(D) Dimitri Ivanowski and Martinus Beijerinck

- 28 Attenuated culture is defined as  
(A) Bacteria lost their ability to cause disease due to excessive sub-culturing  
(B) Bacteria regain their ability to cause disease due to excessive sub-culturing  
(C) Bacteria lost their ability to produce antibiotic  
(D) Bacteria regain their ability to produce antibiotic
- 29 Root nodule bacteria were isolated by  
(A) Martinus Beijerinck  
(B) Louis Pasteur  
(C) Robert Koch  
(D) Winogradsky
- 30 Enrichment culture technique was developed by  
(A) Robert Koch and Louis Pasteur  
(B) Robert Koch  
(C) Robert Petri  
(D) Beijerinck and Winogradsky
- 31 A direct relationship between a suspected pathogen and a disease was proved by the  
(A) Bacterial growth in culture media  
(B) Koch's Postulates  
(C) Spontaneous generation theory  
(D) Germ theory of disease
- 32 Martha Howe has made fundamental contribution about  
(A) Bacteriophage Mu  
(B) E. coli physiology  
(C) T7 Bacteriophage  
(D) T4 Bacteriophage
- 33 Which one of the Scientist was the founder member of the Pennsylvania state university Biotechnology Institute and has studied the regulation of glutamate and glutamine metabolism ?  
(A) Stanley Falkow  
(B) Frederick Neidhardt  
(C) Jean Brenchley  
(D) Martha Howe
- 34 Ability of a lens to separate or distinguish between small objects that are close together is called  
(A) Diaphragm  
(B) Numerical Aperture  
(C) Resolution  
(D) Condenser

- 35 Formula for calculating Numerical Aperture (NA) is
- (A)  $f \tan \theta$
  - (B)  $\eta \sin \theta$
  - (C)  $r \sin \theta$
  - (D)  $d \cos \theta$
- 36 Full form of NDIC is
- (A) Number Differential Interference Microscope
  - (B) Nomarski Differential Interference Contrast Microscope
  - (C) Normal Differential Interference Contrast Microscope
  - (D) Numerical Differential Interference Contrast Microscope
- 37 Fluorescent dye is characterized by
- (A) It illuminated for the shorter period of time
  - (B) It illuminated by light of one wavelength and emitted different
  - (C) It illuminated with the longer wavelength
  - (D) It can be illuminated for a longer period of time
- 38 Approximate resolving power of High Power objective with blue light
- (A)  $2.3 \mu\text{m}$
  - (B)  $0.35 \mu\text{m}$
  - (C)  $0.9 \mu\text{m}$
  - (D)  $0.18 \mu\text{m}$
- 39 In which microscopy the condenser has an annular stop, an opaque disk with a thin transparent ring which produces a hollow cone of light ?
- (A) Fluorescence Microscope
  - (B) Phase contrast Microscope
  - (C) Dark Field Microscope
  - (D) Bright Field Microscope
- 40 The situation in which the field surrounding a specimen appears black while the object itself is brightly illuminated is observed in the Microscope
- (A) Confocal Scanning Microscope
  - (B) Bright Field Microscope
  - (C) Dark Field Microscope
  - (D) Phase contrast Microscope

- 41 An image created by detecting differences in refractive indices and thickness under  
 (A) Confocal Scanning Microscope  
 (B) Dark Field Microscope  
 (C) Differential Interference Contrast Microscope  
 (D) Phase contrast Microscope
- 42 Which fluorochrome used to stains DNA and after staining it fluoresces green?  
 (A) Tetramethyl rhodamine isothiocyanate  
 (B) Acridine Orange  
 (C) Diamidino-2-phenyl indole (DAPI)  
 (D) Fluorescein isothiocyanate (FITC)
- 43 When a advance microscope having eyepieces for both the eye then they are called  
 (A) Research Microscope (B) Trinocular Microscope  
 (C) Binocular Microscope (D) Biconcave Microscope
- 44 When the various lenses are adjusted so that after the specimen is focused with one lens it remains in focus even when switched to another objective lens, the microscope is called  
 (A) Phase contrast Microscope (B) Parfocal Microscope  
 (C) Fluorescent Microscope (D) Dark field Microscope
- 45 Living cells can be observed under which Microscopy  
 (A) Bright Field Microscope (B) Phase contrast Microscope  
 (C) Dark Field Microscope (D) Both (B) and (C)
- 46 What is the approximate Focal length (f) value of oil immersion objective  
 (A) 16mm (B) 2.0 mm  
 (C) 4.0 mm (D) 40 mm
- 47 Electron Microscope was discovered by  
 (A) Antony van Leeuwenhoek (B) Beadle and Tatum  
 (C) Knoll and Ruska (D) Watson and Crick
- 48 Electron gun generate beam of electron due to presence of  
 (A) Prism (B) Mercury vapour arc lamp  
 (C) Copper metal grid (D) Tungsten filament
- 49 Three dimensional view of intracellular structure can be observed in  
 (A) Phase contrast Microscope  
 (B) Differential Interference Contrast Microscope  
 (C) Transmission Electron microscope  
 (D) Scanning electron microscope
- 50 Specimen preparation method in which specimen is coated with a thin film of platinum by evaporation at an angle of about  $45^\circ$  from horizontal so that the metal strikes the microorganism from one side is called  
 (A) Soaking (B) Shadowing  
 (C) Negative staining (D) Freeze-etching

