

**D****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 During Hiss's method for capsule staining which one of the following used as counter stain
 - (A) Safranine
 - (B) 20% CuSO₄
 - (C) Malachite green
 - (D) Congo red

- 2 Chloroform is used during metachromatic granule staining to
 - (A) Use as a mordant
 - (B) Dissolves fat in bacteria
 - (C) Use as a decolorizer
 - (D) Removes primary stain

- 3 Which dye used to stain the endospore during Dorner's method ?
 - (A) Nigrosine
 - (B) Congo red
 - (C) Methylene blue
 - (D) ZNCF Stain

- 4 Stain use for negative staining is
 - (A) Safranine
 - (B) Methylene blue
 - (C) Crystal violet
 - (D) Nigrosine

- 5 pH of the solutions used in staining changes the bacterial surface
 - (A) Electrical charge
 - (B) Capillarity
 - (C) Solubility
 - (D) Color

- 6 Which one of the following is called "Color Intensifiers" ?
 - (A) Auxochrome
 - (B) Mordant
 - (C) Synthetic dye
 - (D) Chromophore

- 7 Which one of the following dye used as an Antiseptic ?
 - (A) Methylene Blue
 - (B) Crystal Violet
 - (C) Safranine
 - (D) Eosine

- 8 Study of fungi is called
 - (A) Phycology
 - (B) Virology
 - (C) Protozoology
 - (D) Mycology

- 9 Science concerned with exploration of life in outer space is recognized as
 - (A) Exobiology
 - (B) Aero Microbiology
 - (C) Applied Microbiology
 - (D) Geochemical Microbiology

- 10 "Magic bullet" first used for the treatment of African sleeping sickness was a dye called
 - (A) Sudan Black
 - (B) Nigrosine
 - (C) Crystal Violet
 - (D) Trypan

- 11 Algae together with the Cyanobacteria produces about
(A) 50% of the planet oxygen
(B) 25% of the earth's N₂
(C) 35% of the planet Carbon
(D) 75% of the planet oxygen
- 12 Which one of the following is called unicellular animal like protists ?
(A) Protozoa
(B) Virus
(C) Sponge
(D) Spirogyra
- 13 Mycobacterium tuberculosis was discovered by
(A) Robert Koch
(B) Wasserman
(C) Chatton
(D) Bassi
- 14 In 1786 first classification of bacteria was introduced by
(A) Carl Woese
(B) Miller
(C) Van Niel
(D) Domagk
- 15 Blood Groups were discovered by
(A) Landsteiner
(B) Fleming
(C) Griffith
(D) Wright
- 16 Agostino Bassi first showed that
(A) A microorganism could cause disease
(B) A potato blight was caused by a mold
(C) Disease was caused by protozoa
(D) Rust fungi caused cereal crop disease
- 17 Use of Agar as a solidifying agent was suggested by
(A) Charles Chamberland
(B) Dimitri Ivanowski and Martinus Beijerinck
(C) Ferdinand Cohn
(D) Fannie Eilshemius and Walther Hesse

- 18 Attenuated culture is defined as
- (A) Bacteria lost their ability to produce antibiotic
 - (B) Bacteria regain their ability to produce antibiotic
 - (C) Bacteria lost their ability to cause disease due to excessive sub-culturing
 - (D) Bacteria regain their ability to cause disease due to excessive sub-culturing
- 19 Root nodule bacteria were isolated by
- (A) Robert Koch
 - (B) Winogradsky
 - (C) Martinus Beijerinck
 - (D) Louis Pasteur
- 20 Enrichment culture technique was developed by
- (A) Robert Petri
 - (B) Beijerinck and Winogradsky
 - (C) Robert Koch and Louis Pasteur
 - (D) Robert Koch
- 21 A direct relationship between a suspected pathogen and a disease was proved by the
- (A) Spontaneous generation theory
 - (B) Germ theory of disease
 - (C) Bacterial growth in culture media
 - (D) Koch's Postulates
- 22 Martha Howe has made fundamental contribution about
- (A) T7 Bacteriophage
 - (B) T4 Bacteriophage
 - (C) Bacteriophage Mu
 - (D) E. coli physiology
- 23 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) Jean Brenchley
 - (B) Martha Howe
 - (C) Stanley Falkow
 - (D) Frederick Neidhardt
- 24 Ability of a lens to separate or distinguish between small objects that are close together is called
- (A) Resolution
 - (B) Condenser
 - (C) Diaphragm
 - (D) Numerical Aperture

- 25 Formula for calculating Numerical Aperture (NA) is
- (A) $r \sin \theta$
 - (B) $d \cos \theta$
 - (C) $f \tan \theta$
 - (D) $\eta \sin \theta$
- 26 Full form of NDIC is
- (A) Normal Differential Interference Contrast Microscope
 - (B) Numerical Differential Interference Contrast Microscope
 - (C) Number Differential Interference Microscope
 - (D) Nomarski Differential Interference Contrast Microscope
- 27 Fluorescent dye is characterized by
- (A) It illuminated with the longer wavelength
 - (B) It can be illuminated for a longer period of time
 - (C) It illuminated for the shorter period of time
 - (D) It illuminated by light of one wavelength and emitted different
- 28 Approximate resolving power of High Power objective with blue light
- (A) $0.9 \mu\text{m}$
 - (B) $0.18 \mu\text{m}$
 - (C) $2.3 \mu\text{m}$
 - (D) $0.35 \mu\text{m}$
- 29 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) Dark Field Microscope
 - (B) Bright Field Microscope
 - (C) Fluorescence Microscope
 - (D) Phase contrast Microscope
- 30 The situation in which the field surrounding a specimen appears black while the object itself is brightly illuminated is observed in the Microscope
- (A) Dark Field Microscope
 - (B) Phase contrast Microscope
 - (C) Confocal Scanning Microscope
 - (D) Bright Field Microscope

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

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

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

