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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.

Name of the Examination :

☛ **B. Sc. (Microbiology) (Sem. I)**

Name of the Subject :

☛ **MB - 01 : Fundamentals of Microbiology**

☛ Subject Code No. : **2 9 2 6** ☛ Section No. (1, 2,.....) : **NIL**

Seat No. :

Student's Signature

(2) પ્રશ્ન પત્રમાં કુલ 50 પ્રશ્નો છે, બધાજ ફરજીયાત 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. Sheet*ની પાછળ છાપેલ છે.**

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

1 Algae together with the Cyanobacteria produces about
(A) 75% of the planet oxygen
(B) 50% of the planet oxygen
(C) 25% of the earth's N_2
(D) 35% of the planet Carbon

2 Which one of the following is called unicellular animal like protists ?
(A) Spirogyra
(B) Protozoa
(C) Virus
(D) Sponge

3 Mycobacterium tuberculosis was discovered by
(A) Bassi
(B) Robert Koch
(C) Wasserman
(D) Chatton

4 In 1786 first classification of bacteria was introduced by
(A) Domagk
(B) Carl Woese,
(C) Miller
(D) Van Niel

5 Blood Groups were discovered by
(A) Wright
(B) Landsteiner
(C) Fleming
(D) Griffith

6 Agostino Bassi first showed that
(A) Rust fungi caused cereal crop disease
(B) A microorganism could cause disease
(C) A potato blight was caused by a mold
(D) Disease was caused by protozoa

7 Use of Agar as a solidifying agent was suggested by
(A) Fannie Eilshemius and Walther Hesse
(B) Charles Chamberland
(C) Dirnitri Ivanowski and Martinus Beijerink
(D) Ferdinand Cohn

8 Attenuated culture is defined as
(A) Bacteria regain their ability to cause disease due to excessive sub-culturing
(B) Bacteria lost their ability to produce antibiotic
(C) Bacteria regain their ability to produce antibiotic
(D) Bacteria lost their ability to cause disease due to excessive sub-culturing

9 Root nodule bacteria were isolated by
(A) Louis Pasteur
(B) Robert Koch
(C) Winogradsky
(D) Martinus Beijerinck

10 Enrichment culture technique was developed by
(A) Robert Koch
(B) Robert Petri
(C) Beijerinck and Winogradsky
(D) Robert Koch and Louis Pasteur

11 A direct relationship between a suspected pathogen and a disease was proved by the
(A) Koch's Postulates
(B) Spontaneous generation theory
(C) Germ theory of disease
(D) Bacterial growth in culture media

12 Martha Howe has made fundamental contribution about
(A) E. coli physiology
(B) T7 Bacteriophage
(C) T4 Bacteriophage
(D) Bacteriophage Mu

13 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) Frederick Neidhardt
(B) Jean Brenchley
(C) Martha Howe
(D) Stanley Falkow

14 Ability of a tens to separate or distinguish between small objects that are close together is called
(A) Numerical Aperture
(B) Resolution
(C) Condenser
(D) Diaphragm

15 Formula for calculating Numerical Aperture (NA) is

(A) $\eta \sin \theta$

(B) $r \sin \theta$

(C) $d \cos \theta$

(D) $f \tan \theta$

16 Full form of NDIC is

(A) Nomarski Differential Interference Contrast Microscope

(B) Normal Differential Interference Contrast Microscope

(C) Numerical Differential Interference Contrast Microscope

(D) Number Differential Interference Microscope

17 Fluorescent dye is characterized by

(A) It illuminated by light of one wavelength and emitted different

(B) It illuminated with the longer wavelength

(C) It can be illuminated fora longer period of time

(D) It illuminated for the shorter period of time

18 Approximate resolving power of High Power objective with blue light

(A) 0.35 μm

(B) 0.9 μm

(C) 0.18 μm

(D) 2.3 μm

19 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) Phase contrast Microscope

(B) Dark Field Microscope

(C) Bright Field Microscope

(D) Fluorescence Microscope

20 The situation in which the field surrounding a specimen appears black while the object itself is brightly illuminated is observed in the Microscope

(A) Bright Field Microscope

(B) Dark Field Microscope

(C) Phase contrast Microscope

(D) Confocal Scanning Microscope

21 An image created by detecting differences in refractive indices and thickness under
(A) Dark Field Microscope
(B) Differential Interference Contrast Microscope
(C) Phase contrast Microscope
(D) Confocal Scanning Microscope

22 Which fluorochrome used to stains DNA and after staining it fluoresces green?
(A) Acridine Orange
(B) Diamidino-2-phenyl indole (DAPI)
(C) Fluorescein isothiocyanate (FITC)
(D) Tetramethyl rhodamine isothiocyanate

23 When a advance microscope having eyepieces for both the eye then they are called
(A) Trinocular Microscope (B) Binocular Microscope
(C) Biconcave Microscope (D) Research Microscope

24 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) Parfocal Microscope (B) Fluorescent Microscope
(C) Dark field Microscope (D) Phase contrast Microscope

25 Living cells can be observed under which Microscopy
(A) Phase contrast Microscope (B) Dark Field Microscope
(C) Both (A) and (B) (D) Bright Field Microscope

26 What is the approximate Focal length (f) value of oil immersion objective
(A) 2.0 mm (B) 4.0 mm
(C) 40 mm (D) 16mm

27 Electron Microscope was discovered by
(A) Beadle and Tatum (B) Knoll and Ruska
(C) Watson and Crick (D) Antony van Leeuwenhoek

28 Electron gun generate beam of electron due to presence of
(A) Mercury vapour arc lamp (B) Copper metal grid
(C) Tungsten filament (D) Prism

29 Three dimensional view of intracellular structure can be observed in
(A) Differential Interference Contrast Microscope
(B) Transmission Electron microscope
(C) Scanning electron microscope
(D) Phase contrast Microscope

30 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) Shadowing (B) Negative staining
(C) Freeze-etching (D) Soaking

31 The in situ location of microorganisms in ecological niches like human gut can be examined under the microscope

(A) Confocal Scanning laser Microscope

(B) Transmission Electron microscope

(C) Scanning electron microscope

(D) Phase contrast Microscope

32 The topography of the bacterial surface flagella can be studied by

(A) Scanning Probe Microscopy

(B) Transmission Electron microscope

(C) Scanning electron microscope

(D) Phase contrast Microscope

33 In SEM secondary electrons entering the detector strikes the

(A) Copper metal grid

(B) Electromagnetic lens

(C) Scintillator

(D) Glass slide

34 Which microscope is used for the study of formation of biofilm on the surface of indwelling medical devices ?

(A) Scanning Probe Microscope

(B) Confocal scanning laser microscope

(C) Transmission Electron microscope

(D) Dark field Microscope

35 During Scanning Probe Microscopy the arrangement of atoms on the specimen surface is determined by

(A) Bombardment of electrons over the surface

(B) Creating a phase over the surface

(C) Moving the probe tip back and forth over the surface

(D) light flow over the surface

36 Scanning Tunneling Microscope can be used for the study of the object

(A) Freeze by Freeze-etching method

(B) Immersed in water

(C) Immersed under cedar wood oil

(D) Kept on radioactive probe

37 Dye used for the differential count of blood is a type of

(A) Acidic dye

(B) Basic dye

(C) Compound dye

(D) Leuco dye

38 Which one of the following is a basic dye ?

(A) Eosine

(B) Nigrosine

(C) Rose Bengal

(D) Neutral red

39 The high lipid content of gram negative bacteria make them permeable to

(A) Primary stain

(B) Counter stain

(C) Acetone

(D) Iodine

40 Which one of the following is used as mordant during Gram's statining

(A) Crystal violet

(B) Iodine

(C) Alcohol

(D) Safranine

41 During Hiss's method for capsule staining which one of the following used as counter stain

(A) Congo red (B) Safranine

(C) 20% $CuSO_4$ (D) Malachite green

42 Chloroform is used during metachromatic granule staining to

(A) Removes primary stain (B) Use as a mordant

(C) Dissolves fat in bacteria (D) Use as a decolorizer

43 Which dye used to stain the endospore during Dorner's method ?

(A) ZNCF Stain (B) Nigrosine

(C) Congo red (D) Methylene blue

44 Stain use for negative staining is

(A) Nigrosine (B) Safranine

(C) Methylene blue (D) Crystal violet

45 pH of the solutions used in staining changes the bacterial surface

(A) Color (B) Electrical charge

(C) Capillarity (D) Solubility

46 Which one of the following is called "Color Intensifiers" ?

(A) Chromophore (B) Auxochrome

(C) Mordant (D) Synthetic dye

47 Which one of the following dye used as an Antiseptic ?

(A) Eosine (B) Methylene Blue

(C) Crystal Violet (D) Safranine

48 Study of fungi is called

(A) Mycology (B) Phycology

(C) Virology (D) Protozoology

49 Science concerned with exploration of life in outer space is recognized as

(A) Geochemical Microbiology (B) Exobiology

(C) Aero Microbiology (D) Applied Microbiology

50 "Magic bullet" first used for the treatment of African sleeping sickness was a dye called

(A) Trypan (B) Sudan Black

(C) Nigrosine (D) Crystal Voilet