



RAN - 2003000201030065



RAN-2003000201030065

F. Y. B. Sc. (Sem. - I) Examination

March - 2023

MB-102 : Fundamental of Microscopy (Microbiology)

[Total Marks: 50

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

F. Y. B. Sc. (Sem. - I)

Name of the Subject :

MB-102 : Fundamental of Microscopy (Microbiology)

Subject Code No.: **2003000201030065**

Seat No.:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Student's Signature

- (2) This exam contains 50 multiple choice questions. Each question carries 1 mark.
(3) All questions are compulsory.

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

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

SET - 2

Multiple Choice Questions

- Q. 1.** Which among the following is azine group containing dye?
A) Phenazine
B) Neutral red
C) Safranin
D) All of the above
- Q. 2.** Which among the following is azo group containing dye?
A) Thiazine
B) Neutral red
C) Methyl orange
D) Safranin
- Q. 3.** Which among the following is yellow color dye?
A) Neutral red
B) Methyl orange
C) Safranin
D) Picric acid
- Q. 4.** Which among the following statement explain physical theory of staining?
A) Staining is done by reaction between two substances without the formation of new compound.
B) Staining is done due to reaction between acidic component of the stain with basic component of the cell.
C) Staining is done due to reaction between basic component of the stain with acidic component of the cell.
D) Staining is done by formation of new compound.
- Q. 5.** Nucleus of the cell react with _____ stain.
A) Acidic
B) Basic
C) Neutral
D) Both acidic and basic
- Q. 6.** What is the function of auxochrome group in dye?
A) It provide color to the dye.
B) It provide electrolytic dissociation to the dye.
C) It provide both Color and electrolytic dissociation.
D) Auxochrome group has no function in dye.

- Q. 24.** Why light microscope is called as bright field microscope?
- A) Because it forms dark image against a brighter background.
 - B) Because it forms bright image against a darker background.
 - C) Because it forms bright image against a brighter background.
 - D) Because it forms dark image against a darker background.
- Q. 25.** How microscope slide is hold on stage in bright field microscope ?
- A) Mechanical stage clip
 - B) Simple slide clips
 - C) Both mechanical stage clip and simple slide clip
 - D) None of the above
- Q. 26.** Select the correct statement/statements from the following about dark field microscope.
- A) Unrefracted or unreflected rays do not enter the objective.
 - B) Only light that has been refracted or reflected by the specimen forms the image.
 - C) Dark field microscope produce detailed image of living, unstained cells and organisms.
 - D) All of the above
- Q. 27.** Which component of the dark field microscope create hollow cone of light that enters object?
- A) Objective lens
 - B) Mechanical stage
 - C) Dark field stop
 - D) Ocular lens
- Q. 28.** On what basis image is formed in phase contrast microscope?
- A) Based on electron dense and electron bright region.
 - B) Based on differences in light intensity after light pass from specimen that provide contrast.
 - C) Based on interaction between fluorescence compound and specimen.
 - D) Based on secondary electron generated from the surface of specimen.

- Q. 29.** What is the common use of the phase contrast microscope from the following?
- A) It is used to observe shape of the living cells.
 - B) It is used to observe microbial motility.
 - C) It is used to detect bacterial structure such as endospore and inclusions.
 - D) All of the above.
- Q. 30.** Which microscope is similar to differential interference contrast microscope?
- A) Scanning tunneling microscope
 - B) Atomic force microscope
 - C) Phase contrast microscope
 - D) Confocal microscope
- Q. 31.** Select correct statement / statements about differential interference contrast microscope from the following?
- A) It creates an image based on differences in refractive indices and thickness of the specimen.
 - B) In this microscope two beams of plane-polarized light at right angles to each other are generated by prisms.
 - C) A live and unstained specimen can be observe using this microscope.
 - D) All of the above
- Q. 32.** What is the function of exciter filter in fluorecence microscope?
- A) Remove short wavelength light.
 - B) Remove short as well as long wavelength light.
 - C) Remove long wavelength light.
 - D) It generate light
- Q. 33.** What is the function of barrier filter in fluorecence microscope?
- A) Blocks ultraviolet radiation but allows visible light.
 - B) Blocks visible light but allows ultraviolet radiation
 - C) Allow and block visible light simultaneously.
 - D) Allow and block ultraviolet light simultaneously.

- Q. 44.** In which of the following microscopic technique sample is kept frozen while being examined?
- A) Scanning electron microscopy
 - B) Phase contrast microscopy
 - C) Electron cryotomography
 - D) Dark field microscopy
- Q. 45.** _____ microscope measures surface features of an object by moving sharp probe over the object surface?
- A) Phase contrast microscope
 - B) Dark field microscope
 - C) Scanning electron microscope
 - D) Scanning probe microscope
- Q. 46.** Gerd Binning and Heinrich Rohrer has invented _____ microscope
- A) Phase contrast microscope
 - B) Scanning tunneling microscope
 - C) Fluorescence microscope
 - D) Dark field microscope
- Q. 47.** What is the medium of travel of electron in Transmission electron microscope?
- A) Air
 - B) Water
 - C) Solid surface
 - D) High vacuumed
- Q. 48.** In shadowing technique (sample preparation technique in electron microscopy) specimen is coated with thin film of platinum at _____ angle.
- A) 90°
 - B) 60°
 - C) 45°
 - D) 80°

Q. 49. Select correct sentences from the following about dyes.

- A) Dye is a compound that contain chromophore group as well as auxochrome group.
- B) Dye is a compound that only contain chromophore group.
- C) Dye is a compound that only contain Auxochrome group.
- D) Dye is a compound that neither contain chromophore group nor auxochrome.

Q. 50. Which among the following is acidic auxochrome group?

- A) OH
 - B) NH₂
 - C) Both OH and NH₂
 - D) None of the above.
- _____

SPACE FOR ROUGH WORK