

# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Basic Laboratory Sciences And Clinical Techniques

Course Code - GEAHS401

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Answer all the questions. Each question carry one mark.

9. 1. Total Magnification is obtained by \_\_\_\_\_

*Mark only one oval.*

- Magnifying power of the objective lens
- Magnifying power of eyepiece
- Magnifying power of condenser lens
- Magnifying power of both the objective lens and eyepiece

10. 2. In Phase contrast microscopy, the rate at which light enters through objects is \_\_\_\_\_

*Mark only one oval.*

- Constant
- Inversely proportional to their refractive indices
- Directly proportional to their refractive indices
- Exponentially related to their refractive indices

11. 3. Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed?

*Mark only one oval.*

- Eyepiece lens
- Objective lens
- Condenser lens
- Magnifying lens

12. 4. Resolving power of a microscope is a function of \_\_\_\_\_

*Mark only one oval.*

- Wavelength of light used
- Numerical aperture of lens system
- Refractive index
- Wavelength of light used and numerical aperture of lens system

13. 5. In fluorescence microscopy, which of the following performs the function of removing all light except the blue light?

*Mark only one oval.*

- Exciter filter
- Barrier filter
- Dichroic mirror
- Mercury arc lamp

14. 6. What do phase-contrast and dark-field microscopes have in common?

*Mark only one oval.*

- They increase contrast between the specimens and their surroundings without staining.
- They make specimens appear dark on a bright background
- They make specimens visible that refract light away from the objective.
- None of these

15. 7. A microscope that exposes specimens to ultraviolet and forms an image with the resulting light emitted at a different wavelength is called a \_\_\_\_\_ microscope.

*Mark only one oval.*

- phase-contrast
- fluorescence
- dark-field
- scanning electron

16. 8. Scanning electron microscopy is most often used to reveal \_\_\_\_\_

*Mark only one oval.*

- surface morphology
- internal structures
- both surface and internal structures simultaneously
- either surface or internal structures, but not simultaneously

17. 9. If you wish to change an immunofluorescence stain so it stains a different type of microorganism than it did before, what would you do

*Mark only one oval.*

- Switch from epifluorescence to transmitted fluorescence
- Change to a different type of fluorescent dye.
- Use a different type of antibody.
- All of these

18. 10. The resolving power of unaided human eye is

*Mark only one oval.*

- 1 cm
- 100  $\mu\text{m}$
- 200nm
- 400nm

19. 11. -Which of the following is used in electron microscope?

*Mark only one oval.*

- electron beams
- magnetic fields
- light waves
- electron beams and magnetic fields

20. 12. Which of the following are true for electron microscopy?

*Mark only one oval.*

- specimen should be thin and dry, image is obtained on a phosphorescent screen and electron beam must pass through evacuated chamber
- electron beam must pass through evacuated chamber
- image is obtained on a phosphorescent screen
- specimen should be thin and dry

21. 13. When the power of the objective lens will be 20X, then magnification is

*Mark only one oval.*

- 30 times
- 20 times
- 200 times
- 2000times



22. 14. Which of the following light is suitable for maximum resolution

*Mark only one oval.*

- Red
- blue
- green
- orange

23. 15. What mordant is used in Gram staining?

*Mark only one oval.*

- crystal violet
- safranin
- acid-alcohol
- iodine

24. 16. Which type of microscope is especially useful for viewing thick structures such as biofilms?

*Mark only one oval.*

- scanning electron microscopes
- phase-contrast microscope
- confocal scanning laser microscope
- atomic force microscope

25. 17. Who is the probable inventor of the compound microscope?

*Mark only one oval.*

- Girolamo Fracastoro
- Zaccharias Janssen
- Antonie van Leeuwenhoek
- Robert Hooke

26. 18. Co-localization analysis can be detected by

*Mark only one oval.*

- Confocal microscope
- fluorescence microscope
- both Confocal microscope and fluorescence microscope
- scanning electron microscope

27. 19. Fluorescence microscope is a type of

*Mark only one oval.*

- Electron microscope
- optical microscope
- Scanning electron microscope
- None of these

28. 20. In fluorescence, mitochondria stained through Mito-tracker appears

*Mark only one oval.*

- Red
- Green
- blue
- purple

29. 21. In fluorescence, nuclei stained through hoschet 33258 appears

*Mark only one oval.*

- blue
- Red
- green
- purple

30. 22. In fluorescence, actin cytoskeleton stained through phalloidin derivatives appears

*Mark only one oval.*

- purple
- Greene
- blue
- pink

31. 23. A toxic substance produced by biological system is specially referred to as a ---  
---

*Mark only one oval.*

- toxicant  
 xenobiotic  
 toxin  
 poison

32. 24. . Which of the following was banned under the Delaney clause of the Food Additive Amendment of 1958

*Mark only one oval.*

- sulfamethazine  
 cyclamate  
 phytoestrogens  
 aflatoxin

33. 25. Which of the following is NOT an initiating event in carcinogenesis

*Mark only one oval.*

- DNA adduct formation  
 mutation of proto-oncogenes  
 mitogenesis  
 DNA strand breakage

34. 26. The example of local poisoning is

*Mark only one oval.*

- Oxalic acid
- Sulphuric acid
- Chromic acid
- None of these

35. 27. The major treatment of Lead poisoning

*Mark only one oval.*

- Chronotherapy
- Chelation Therapy
- Lead replacement
- Chemotherapy

36. 28. Chronic poisoning involves

*Mark only one oval.*

- Targeted organ failure
- Multi-organ failure
- blood loss
- Numbness

37. 29. Which of the following metal toxicity leads to encephalopathy

*Mark only one oval.*

- Copper
- Iron
- Lead
- Zinc

38. 30. The compound used for Chelation Therapy

*Mark only one oval.*

- Heparin
- Tetracycline
- EDTA
- All of these

39. 31. Which of the following is used to lyse the nucleus and release the DNA?

*Mark only one oval.*

- sodium dodecyl sulfate
- ammonium sulfate
- ferric phosphate
- fluorine

40. 32. In purification steps of nucleic-acids, phenol is used for

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*Mark only one oval.*

- deproteinization
- denaturation
- lowering pH
- lowering viscosity

41. 33. Nucleic acid hybridization is used to identify

*Mark only one oval.*

- RNAs
- DNAs
- Complementary base sequences
- Proteins

42. 34. In which of the following techniques, the DNA is labeled using complementary sequences and then analyzed using autoradiography?

*Mark only one oval.*

- Western blotting
- Southern blotting
- Isopycnic centrifugation
- Spectrophotometry

43. 35. Which of the following molecules can be analyzed using a northern blot?

*Mark only one oval.*

- RNA
- Carbohydrates
- Proteins
- DNA

44. 36. Which of the following is a commonly used label in blotting techniques?

*Mark only one oval.*

- vimentin
- avidin
- streptomycin
- biotin

45. 37. Which technique is not used to separate nucleic acids of size greater than 25 kb?

*Mark only one oval.*

- SDS-PAGE
- Pulsed-field electrophoresis
- 2D- gel electrophoresis
- None of these



46. 38. Which type of gel is used for large nucleic acids?

*Mark only one oval.*

- acrylamide
- cellulose
- agarose
- sephadex

47. 39. Which of the following is a primary factor that dictates how far a protein will migrate during SDS-PAGE?

*Mark only one oval.*

- Degree of tertiary structure
- Degree of secondary structure
- Size
- Number of subunits

48. 40. Which of the following is true about SDS-PAGE?

*Mark only one oval.*

- Staining with ethidium bromide allows visualization of results
- It separates proteins by charge
- The main ingredient in the gel is agarose
- It requires a protein-denaturing gel

49. 41. If wave length is 10 nm . So what is the frequency ?

*Mark only one oval.*

0.3

0.5

1.2

0.8

50. 42. EMR are consist of

*Mark only one oval.*

Photons

electrons

Laser

None of these

51. 43. Which spectroscopy is working on the principle of magnetic level ?

*Mark only one oval.*

FTIR

IR

NMR

UV

52. 44. The region of electromagnetic spectrum for nuclear magnetic resonance is

*Mark only one oval.*

- Microwave
- Radio frequency
- Infrared
- UV-rays

53. 45. In which type of chromatography, the stationary phase held in a narrow tube and the mobile phase is forced through it under pressure?

*Mark only one oval.*

- Column chromatography
- Planar chromatography
- Liquid chromatography
- Gas chromatography

54. 46. In chromatography, the stationary phase can be \_\_\_\_\_ supported on a solid.

*Mark only one oval.*

- Solid or liquid
- Liquid or gas
- Solid only
- Liquid only

55. 47. What is the first stage of the two-stage two-dimensional PAGE?

*Mark only one oval.*

- Molecular vibrations
- Sedimentation
- Isoelectric focussing
- HPLC

56. 48. Liquid chromatography can be performed in which of the following ways?

*Mark only one oval.*

- Only in columns
- Only on plane surfaces
- Either in columns or on plane surfaces
- Neither in columns nor on plane surfaces

57. 49. Gas chromatography can be performed in which of the following ways?

*Mark only one oval.*

- Only in columns
- Only on plane surfaces
- Either in columns or on plane surfaces
- Neither in columns nor on plane surfaces

58. 50. In gas chromatography, the basis for separation of the components of the volatile material is the difference in

*Mark only one oval.*

- Partition coefficients
- Conductivity
- molecular weight
- molarity

59. 51. In reverse phase chromatography, the stationary phase is made

*Mark only one oval.*

- non-polar
- polar
- either non-polar or polar
- none of these

60. 52. In the most widely used beam splitter, a thin film of \_\_\_\_\_ is sandwiched between two plates of low refractive index solid. Fill the blank with a suitable option.

*Mark only one oval.*

- Mylar
- Silicon carbide
- Ferrous oxide
- Silver chloride

61. 53. Which of the following is not true about Fourier Transform Infrared (FTIR) spectrometer?

*Mark only one oval.*

- It is of non-dispersive type
- It is useful where repetitive analysis is required
- Size has been reduced over the years
- Size has increased over the years

62. 54. Which of the following has to be computed to determine transmittance and absorbance at various frequencies?

*Mark only one oval.*

- Ratio of signal and noise
- Ratio of sample and reference spectra
- Sample spectra
- Reference spectra

63. 55. Which of the following is the reference that is generally used in FTIR interferometer?

*Mark only one oval.*

- NaCl solution
- Alcohol
- Base solution
- Air

64. 56. NMR is the study of absorption of \_\_\_\_\_ by nuclei in a magnetic field?

*Mark only one oval.*

- Radioactive radiation
- IR radiation
- Radio frequency radiation
- Microwaves

65. 57. In NMR spectroscopy, the spinning nuclei in strong magnetic field must be irradiated by which of the following?

*Mark only one oval.*

- Perpendicular and stronger field
- Perpendicular and weaker field
- Parallel and stronger field
- Parallel and weaker field

66. 58. Which of the following are considered to be the lowest form of Electromagnetic radiation?

*Mark only one oval.*

- IR radiation
- Micro waves
- UV radiation
- Radio waves

67. 59. The difference between the field necessary for resonance in the sample and in some arbitrary chosen compound is which of the following?

*Mark only one oval.*

- Field shift
- Resonance shift
- Matrix effects
- Chemical shift

68. 60. Using the powder method of diffractometers, which of the following can be determined?

*Mark only one oval.*

- Percentage of K<sup>+</sup>
- Percentage of Na<sup>+</sup> and Cl<sup>-</sup>
- Percentage of KBr and NaCl
- Percentage of Br<sup>-</sup>

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