

D 13368

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Name.....

Reg. No.....

FIFTH SEMESTER B.Voc. (PROGRAMME) EXAMINATION, NOVEMBER 2021

Fish Processing Technology

SDC5AQ20—INSTRUMENTATION IN FISH PROCESSING AND ANALYSIS

Time : Three Hours

Maximum : 80 Marks

Section A*Answer all questions.**Each question carries 1 mark.*

1. In which type of chromatography the stationary phase is held in narrow tube and the mobile phase is forced through it under pressure ?
 - (a) Column chromatography.
 - (b) Planar chromatography.
 - (c) Liquid chromatography.
 - (d) Gas chromatography.
2. For the separation of which of the substance the gas chromatography is used ?
 - (a) Thermally stable compounds.
 - (b) Volatile organic compounds.
 - (c) Thermally stable inorganic compounds.
 - (d) Low molecular weight gaseous species.
3. Total magnification is the product of two values :power of eye piece and power of _____.
 - (a) Ocular lens.
 - (b) Objective lens.
 - (c) Radius of diaphragm.
 - (d) Distance between ocular and objective lens.
4. The objective lenses are the one :
 - (a) Closest to the eye.
 - (b) Closest to the specimen.
 - (c) Closest to the condenser.
 - (d) At the base of the microscope.
5. How does the ultraviolet light microscopy use fluorescence to make images ?
 - (a) Objects absorb invisible ultraviolet light and emit nothing.
 - (b) Objects absorb invisible ultravioletlight and emit visible light to make the images.
 - (c) Objects transmit ultraviolet light without absorbing it.
 - (d) Object scatter all the ultraviolet light and that makes images.

Turn over

6. The instrument that produces a bright image of specimen against a dark background is called a _____ microscope.
- (a) Phase contrast. (b) Transmission electron.
(c) Scanning electron. (d) Bright field.
(e) Dark field.
7. The _____ microscope is a type of microscope that has one eyepiece.
- (a) Stereo. (b) Compound.
(c) Electron. (d) Monocular.
8. The secondary electron radiated back in scanning electron microscope is collected by _____.
- (a) Specimen. (b) Anode.
(c) Vacuum chamber. (d) Cathode.
9. _____ secure the slide in position for holding and viewing in a microscope.
- (a) Diaphragm. (b) Light source.
(c) Condenser. (d) Coarse adjustment knob.
(e) None of these.
10. Which of the following is the disadvantages of hydrogen which can be used as carrier gas in the chromatography ?
- (a) Dangerous to use. (b) Expensive.
(c) Reduced sensitivity. (d) High density.

(10 × 1 = 10 marks)

Section B

*Answer any **eight** questions.
Each question carries 2 marks.*

11. What is northern blotting ?
12. Write short notes on the principle of working of phase contrast microscope.
13. Comment on fluorescent microscope.
14. What is TEM ?
15. What is pH meter ?
16. What are the different types of oxygen probes ?
17. What is the principle behind the flame photometry ?
18. What are the applications of microarrays ?
19. Name four metals which can be quantified through AAS.

20. How thin layer chromatography works ?
21. What is a refractometer ?
22. What is column chromatography ?

(8 × 2 = 16 marks)

Section C

*Answer any six questions.
Each question carries 4 marks.*

23. What is immune electrophoresis ? Comment on its applications.
24. What are different types of light microscopes ? Explain the differences.
25. Explain the principle and applications of atomic absorption spectroscopy.
26. Explain the working of a SEM.
27. Explain the components of HPLC with the help of diagram.
28. Comment on the indirect ELISA and its applications.
29. What is PCR ? How it is useful in fish processing industry ?
30. With a neat diagram, explain the parts of a compound microscope.
31. Explain the working of a pH meter. How it is useful in biological research ?

(6 × 4 = 24 marks)

Section D

*Answer any two questions.
Each question carries 15 marks.*

32. With the help of a labelled diagram, explain the different components of a Gas chromatography. Explain the principle and working of Gas Chromatograph.
33. Write the principle of MALDI-TOF. What are its the applications ?
34. Write the principle of Spectrophotometric analysis of samples. With a diagram, explain the different parts and working of UV-visible spectrophotometer. What are its applications ?
35. Describe the process of electrophoretic separation of protein. Explain the isoelectric focusing and mention its application in research.

(2 × 15 = 30 marks)