Total number of printed pages —4

63 (FY)SEM–2/MAJ2/ZOOMAJ1024

2024

ZOOLOGY

Paper : ZOOMAJ1024

(Biological Techniques)

Full Marks : 50

Pass Marks : 20

Time : Two hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer (***all compulsory***) : 1×5=5

   (a) Which type of gel is commonly used for protein in gel electrophoresis ?

   (i) Agarose gel

   (ii) Polyacrylamide gel

   (iii) Cellulose acetate

   (iv) Starch gel

Contd.

(b) What colour will haematoxylin stain the nuclei ?

(i) Dark blue purple

(ii) Red

(iii) Greenish blue

(iv) Pink

(c) A normal fasting blood glucose level is

(i) 50-100*mg/dL*

(ii) 50-160*mg/dL*

(iii) 70-99*mg/dL*

(iv) 70-180*mg/dL*

(d) In gas chromatography, the carrier gas used is

(i) Oxygen

(ii) Helium

(iii) Neon

(iv) Argon

(e) Taq polymerase used in PCR, has been isolated from.

(i) *Escherichia coli*

(ii) *Yersinia pestis*

(iii) *Vibrio cholerae*

(iv) *Thermophilus aquaticus*

2. Answer the following questions ***(any five)***: 2×5=10

(a) What are the types of rotors in a centrifuge machine ?

(b) What is the difference between the stacking and resolving gel ?

(c) Define resolving power of Microscope.

(d) What are the functions of condenser lens, objective lens and eyepiece ?

(e) Give *four* applications of electrophoresis.

(f) What are the stationary and mobile phases applied in HPLC ?

(g) Give the working principle behind a pH meter.

3. Answer the following questions ***(any five)*** : 5×5=25

(a) Describe the working principle of a phase contrast Microscope.

(b) Write a note on the abnormal constituents of urine.

(c) Describe the stages of PCR cycle with diagram.

(d) Describe the instrumental set-up of a UV-visible spectrophotometer.

(e) Differentiate between primary and secondary hypertension.

(f) Write a note on the composition of blood.

(g) Write a note on affinity chromatography.

(h) Write a note on the different types of microtome.

4. Answer the following question ***(any one)***: 10

(a) Describe the working principle and components of TEM. 4+6=10

(b) What are anion and cation exchanger? Write a note on the working of ion-exchange chromatography and it's application. 2+6+2=10