2010

M.Sc.

3rd Semester Examination

ZOOLOGY

PAPER—Z-301

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group—A

(Computer Application and Bioinformatics)

1. Answer any *two* of the following : 2×2

(a) List the characters of a Digital Computer.

(b) What is string variable? Give example

(c) Convert $(4E9)_{16} = (x)_{10}$

(d) What are MICR and VDU?

2. Answer any *two* of the following : 4×2

(a) Distinguish between :

(i) PPP and SLIP.

(ii) System and Application Software. 2+2

(b) What is the 'workbook' of MS Excel ? How do you work with formulae in MS Excel ? 1+3

(c) State the use of annotated sequence database in bioinformatics

(d) Compare Simulator and Emulator. 2+2

3. Answer any *one* of the following : 8×1

(a) Write Short notes on :

(i) Router

(ii) www

(iii) ASCII code ?

(iv) State the advantages of high level language over machine language ?

(b) (i) State the difference between source program and object program. What is assembly language ?

(ii) What are the advantages of high level language over machine language ? What is JAVA ?

(3+1)+(3+1)

Group—B

(Bio-Instrumention)

1. Answer any *two* questions : 2×2

(a) State the role of secondary electron in SEM. 2

(b) Draw the gravity-fed perfusion apparatus and mention its function in laboratory. 1+1

(c) Distinguish between :

Microwaves Vs. Radiowaves. 1+1

(d) Mention the biological significance of gel filtration.

2. Answer any *two* questions : 4×2

(a) (i) What are the different components related to X-ray diffraction analysis?

(ii) Distinguish between :

X-ray—'Rotation Photograph'

Vs.

X-ray—'Powder Photograph'. 2+2

(b) What is probe microscopy? Draw the basic scheme of a probe microscope. 1+3

(c) Write brief notes on IMAC-Technique. 4

(d) (i) Mention the factors affecting gel electrophoresis.

(ii) What is the relative centrifugal force? 2+2

3. Answer any *one* from the following : 8×1

(c) Write the principle of Gel-Electrophoresis. Discuss briefly the steps of Agarose Gel Electrophoresis. Mention its biological application. 2+4+2

(b) (i) Explain how an electron microscope uses beam of electrons for magnification. 3

(ii) What do you mean by magnetic moment of nucleus. 3

(iii) List weak and strong anion excharger. 2