M.Sc.

2016

2nd Semester Examination

ZOOLOGY

PAPER—ZOO-202

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.

Answer *all* questions of the following.

Group — A

(Bio-Physics)

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

   (a) What is 'rem' (Roentgen-equivalent mammals) ?   2

   (b) State the function on ionophores.   2

   (c) Why K^+ diffuse faster than Na^+ through the Plasma membrane ?   2

   (d) Write note on : Nanomaterials.   2

(Turn Over)

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

  (a) How do you prove that 'The exponentiat radioactive disintegration of atoms, "N", as a function of time "t" ?

                                                     4

  (b) To 'Seeing nano' in what way you would equip your laboratory by modern electronic instruments ?   4

  (c) Define 'Brownian movement' State its application in biological science.   2+2

  (d) Why renal patients need dialysis ? Add a note an Electrodialysis.   2+2

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

  (a) How membrane proteins remain associated with the lipid bilayer ? State the role of detergents for reconstituting the functional membranc protein systems.   4+4

  (b) Write short notes on any *four* of the following :   4×2

     (i) FRAP ;

    (ii) Glycophorin ;

   (iii) Phospholipid mobility ;

   (iv) Medical applications of nanotechnology.

    (v) Scintillation counter ;

   (vi) Entropy.

Group — B

(*Computer application and Bioinformatics*)

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

   (a) What do the following abbreviations stand for : html, TCP, BLAST, URL.

   (b) Define any two Internet tools.

   (c) Briefly characterize GenBank.

   (d) Explain Bit and Byte.

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

   (a) Convert : $(3F7A)_{16} = (?)_2$

                      $(11000)_2 = (?)_{10}$ (3+1

   (b) Compare PC dialup with LAN dial up. 2+2

   (c) Enlist various Internet resources on Biological sciences. 4

   (d) Explain Midnight Zone, Twilight zone and Homology. (1+1+2)

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

   (a) (i) Classify Biological Databases with an example each.

      (ii) Enlist the features of Database.

                                                   4+4

   (b) (i) Elucidate the connection between Swiss Port and TrEMBL. 4

      (ii) Highlight the importance of Bioinformatics in modern age. Cite any example where you may be benefitted from Bioinformatics. 3+1

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