

16P115

(Pages:2)

Name:

Reg. No.....

FIRST SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2016

(Regular/Supplementary/Improvement)

(CUCSS-PG)

CC15P ZO1 C02 – BIOPHYSICS AND BIOSTATISTICS

(Zoology)

(2015 Admission Onwards)

Time: Three Hours

Maximum: 36 Weightage

Part A

I. Answer the following:-

1. What is Brownian movement?
2. Define Fick's first law.
3. Explain resonance theory of Hemholtz.
4. Calculate the pH of a solution containing 3.2×10^{-4} moles of hydrogen ions.
5. Comment on ionizing radiations.
6. What do you understand by deep brain stimulation?
7. Explain isoelectric focusing.
8. Give the principle of affinity chromatography.
9. Write a brief note on the principle of ECG
10. Explain the following terms associated with column chromatography.
(a) packing (b) elution (c) loading (d) elution volume
11. What is scatter diagram?
12. What do you mean by critical region?
13. Define standard deviation.
14. Find the probability of drawing one king, one queen and one ace from a pack of cards in three consecutive draws without replacement.

(14 × 1= 14 weightage)

Part B

II. Answer any *seven* of the following:-

15. Explain the principle & application of HPLC.
16. What is osmosis? Explain the laws of osmosis.
17. Explain the dissociation of a weak acid and derive Henderson-Hasselbalch equation
18. Elaborate the principle, working & applications of X ray diffraction technique.
19. Write a note on the different fixation & staining technique used in EM.
20. Discuss the uses of nanotechnology in the field of health care.
21. What is Gibb's Donnan Equilibrium? Explain its significance.
22. Explain the different measures of central tendency.
23. Describe the methods of data collection and classification.
24. Explain the different methods of graphical presentation of data. **(7 × 2=14 weightage)**

(1)

Part C

III. Answer any *two* of the following:-

25. Give an account on the principle and working of two radiation detectors.
26. What is Laser? Explain its principle and applications in biology.
27. Describe the aspects of sound transmission in the ear and theories related to pitch Reception.
28. Explain the importance of statistical tests. Elaborate the methods of 't' test, chi square test and F test.

(2 × 4= 8 weightage)
