(c) Explain the Endosymbiotic theory. (3)

4. (a) Explain GPCR pathway with any one secondary messenger. (7)

(b) Discuss role of protein glycosylation within ER. (5)

(c) Distinguish between Passive and Facilitated diffusion. (3)

5. (a) Explain the assembly of microtubules and its role in cellular mobility. (8)

(b) What are the polymorphic forms of Lysosomes? (4)

(c) Enumerate with diagram the organization within nucleolus. (3)

6. (a) What are the major cell-to-cell interactions? (6)

(b) Comment with diagram upon the transport across nucleus. (6)

(c) What is euchromatin and how it is different from heterochromatin? (3)

[This question paper contains 4 printed pages.]

02.01.2024(M)

Your Roll No.....

Sr. No. of Question Paper : 1596 G

Unique Paper Code : 2232011102

Name of the Paper : DSC-2 Biology of Cell : Structure and function

Name of the Course : **B.Sc. (H) Zoology (NEP)**

Semester : I

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer **FOUR** questions in all.
3. Question No. **1** is compulsory.

1. (a) Define : (1×3)

(i) Osmosis

(ii) Aquaporins

P.T.O.

(iii) Glycocalyx

(b) Write exact location and function of the following **(Any three)** : (1×3)

(i) Lamins

(ii) Cadherins

(iii) Flippase

(iv) Signal Peptide

(c) State the contributions of **(any three)** : (1×3)

(i) Gorter and Grendel

(ii) Benda

(iii) Peter Mitchell

(iv) Tim Hunt, Paul Nurse, L H Hartwell

(d) Fill in the blanks : (1×4)

(i) _____ organelle is also referred to as suicidal bag.

(ii) A structure found within the nucleus contains much RNA, this structure is called _____ .

(iii) _____ is an intracellular protein that release calcium from within the lumen of Endoplasmic reticulum.

(iv) The effector protein in GPCR that releases cAMP is _____ .

(e) Expand the following : (1×2)

(i) MTOC

(ii) NPC

2. (a) Write an account on the structure and function of mitochondrial respiratory chain. (6)

(b) Why is Golgi apparatus termed as the "Post Office of the Cell"? Discuss with suitable diagram. (6)

(c) Distinguish between co-translational and post-translational transport of proteins. (3)

3. (a) Explain with diagram the events that regulate the cell cycle. (9)

(b) Distinguish between microfilaments and intermediate filaments. (3)

P.T.O.