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6. Write short notes on **any three** : (3×5=15)

- (a) Nuclear pore complex
- (b) Fluid mosaic model of plasma membrane
- (c) Polymorphism of lysosomes
- (d) Endosymbiotic theory
- (e) Signal hypothesis

(1200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 13545 **K**

Unique Paper Code : 2234000018

Name of the Paper : Zoo-GE-18: Biology of
Animal Cells

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

Semester : VII, NEP-UGCF 2022

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. There are **six (06)** questions in this question paper.
3. Question No. **1** is compulsory.
4. Attempt any **four** including question no **1**.
5. **All** questions carry equal marks.

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1. (a) Define the following : (5×1=5)

- (i) Synaptonemal complex
- (ii) Restriction point
- (iii) Karyopherin
- (iv) Clathrin
- (v) Lamin

(b) Differentiate between the following : (3×2=6)

- (i) Heterochromatin and Euchromatin
- (ii) Mitosis and Meiosis
- (iii) Active and Passive transport

(c) Fill in the blanks : (4×1=4)

- (i) _____ is an example of one of the post- translational modifications that happens in the ER.
- (ii) _____ formation is a mechanism for dosage compensation in mammalian females.
- (iii) Desmosomes have _____ cytoskeletal elements that help in their cell-cell adhesion function.

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(iv) _____ is the cell organelle where catalase is primarily present.

2. (a) Describe the mechanism and different pathways of vesicular transport in a cell. (9)

(b) Differentiate between tight junctions and gap junctions. (6)

3. Explain how the various structural components of mitochondria help in generation of ATP during respiration. (15)

4. (a) Compare and contrast the structure, organization and function of microfilaments and microtubules. (8)

(b) Describe various levels of chromatin organization and packaging with emphasis on primary level. (7)

5. (a) What are the various components of cell cycle regulatory system? How do they regulate cell cycle? (10)

(b) Explain the mechanism of import of materials in the nucleus. (5)

P.T.O.