

**2 0 2 2**

( June/July )

**ZOOLOGY**

( Core )

Paper : C-4

( **Cell Biology** )

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Fill in the blanks : 1×5=5

(a) Membrane bound organelles are absent  
in \_\_\_\_\_.

(b) Virus that attaches bacteria is called  
\_\_\_\_\_.

(c) Microtubules are hollow unbranched  
tubes composed of subunits of protein  
\_\_\_\_\_.

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- (d) Nucleoplasm is also known as \_\_\_\_.
- (e) \_\_\_\_ is a multifunctional protein activated during G<sub>1</sub> phase.
2. Distinguish between (any two) : 3×2=6
- (a) Osmosis and Diffusion
- (b) Heterochromatin and Euchromatin
- (c) Viroid and Virus
3. Write short notes on [(a) and (b) or (c) and (d)] : 3×2=6
- (a) Function of lysosomes
- (b) S-phase
- (c) Desmosomes
- (d) Nucleosome
4. Discuss the structure and function of microfilaments. 4+3=7
5. Discuss the structure of mitochondrial particle and respiratory chain. 4+5=9

Or

Give an account of chemiosmotic theory.  
Mention the functions of mitochondria. 5+4=9

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( Continued )

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6. Describe the various stages of mitosis with necessary diagrams. 5+2=7
7. Write about the structure of nuclear envelope and mention two important functions of it. 5+2=7
8. Discuss the role of second messengers. Write briefly about molecular structure of GPCR. 3+3=6

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