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C/18/B.Sc./2nd Sem/ZOOH/C3T

2018

2nd Semester

ZOOLOGY

PAPER—C3T

(Honours)

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any five Questions :

5×2

- (a) Name two holothuroid larvae with one important feature of each.
- (b) Why *Pila* sp. is known as amphibious animal?
- (c) What is torsion?

(Turn Over)

- (d) What is trophallaxis?
- (e) What is conglobate gland?
- (f) What are the different parts of a nephridium?
- (g) Mention the names of respiratory structure of prawn and cockroach.
- (h) What is monopectinate gill? Give an example.

2. Answer any four Questions :

4×5

- (a) Discuss the water vascular system of star fish with suitable diagram.
- (b) Write down the classification of the phylum mollusca (schematically) with one example.
- (c) Enumerate the affinities of Echinoderms with chordates.
- (d) Describe the feeding mechanism of *Pila* sp.
- (e) State the general characters of Onychophora. Add a note on its evolutionary significance.
- (f) Discuss the structure of septal nephridium in *Pheretima* with suitable diagram.

C/18/B.Sc./2nd Sem/ZOOH/C3T

(Continued)

C/18/B.Sc./2nd

3. Answer

(a) (i)

(i)

(b) W

h

n

ph

3. Answer one one Question :

1×10

(a) (i) Give an account of social life in termite. 4+6

(ii) Describe the larval forms of Echinodermata.

(b) Write the general characteristic features of hemichordata. Briefly discuss its affinity with other non-chordate and chordate. Add a note on its phylogeny. 3+5+2

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Illustrate the answers wherever necessary.

1. Answer any five Questions :

5×2

- (a) What do you mean by switch protein ?
- (b) What is nuclear localization signal (NLS) ?
- (c) What do you understand by "endosymbiont hypothesis" of organellar origin ?

(Turn Over)

(d) How phosphorylation event activate cyclin & cyclin dependent kinase complex?

(e) State the functions of dynein and kinesin.

(f) What are the difference between constitutive secretory pathway and regulated secretory pathway?

(g) State the significance of prophase-I of meiosis.

(h) Write a short note on prion.

2. Answer any *four* Questions :

4×5

(a) Give a brief account of protein translocation through endoplasmic reticulum. 5

(b) What do you mean by cell cycle check point? State the role of p53 in cell cycle regulation. 2+3

(c) (i) What are the major components of extracellular matrix? 2

(ii) Where do you find fibronectin? State its function. 1+2

(d) What is nucleosome? What is solenoid structure of chromatin? Describe the different level of packaging of eukaryotic Chromatin. 1+2+3

C/18/B.Sc./2nd Sem/ZOOH/C4T

(Continued)

C/18/B.S

(e) (i) Compare between apoptosis and necrosis.

(ii) What are aquaporins? 3+2

(f) Write a short note on cyclin dependent kinase. 5

3. Answer any *one* Question : 1×10

(a) What do you mean by fluidity of a membrane?

⊕ Describe with labelled diagram, the ultrastructure and composition of plasma membrane with special reference to fluid mosaic model. 2+2+6

(b) (i) Describe with labelled sketches, the structural organization of G-protein coupled receptors mentioning its ligand binding and G-protein interaction sites.

(ii) Elucidate the mechanism of c-AMP formation when signal molecules bind with GPCR.

(3+2)+5

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2nd Semester

ZOOLOGY

(Honours)

PAPER—C3P

(Practical)

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. Dissect and display the digestive/nervous system of specimen provided (*Periplaneta* sp.). 8+2
2. Laboratory Note Book and Project Submission. 2
3. Viva-Voce. 3

(Turn Over)

Total Pages—2

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2018

2nd Semester

ZOOLOGY

(Honours)

PAPER—C4P

(Practical)

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. Prepare a stained squash of the specimen provided to study the various stages of mitosis/meiosis. Identify a stages with reasons and draw a labelled diagram of the stage you identified.
5+5+2+3

(Turn Over)

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|--------------------------|---|
| 2. Laboratory Note Book. | 2 |
| 3. Viva-Voce | 3 |

বঙ্গানুবাদ

দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রদত্তমান নির্দেশক।

পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দেওয়া প্রয়োজন।

- ১। মাইটোসিস/মিয়োসিসের বিভিন্ন দশা পর্যবেক্ষনের জন্য স্লাইড তৈরী কর, রঞ্জিত কর, একটি দশা নির্ণয় করে (উপযুক্ত কারণ সহ), ঐ দশার চিহ্নিত চিত্র অঙ্কন কর।

৫+৫+২+৩

- ২। পরীক্ষাগার খাতা

২

- ৩। মৌখিক পরীক্ষা

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