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B.Sc./5th Sem (H)/ZOOLOGY/23(CBCS)

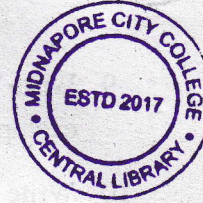
2023

5th Semester Examination

ZOOLOGY (Honours)

Paper : DSE 1-T

[CBCS]



Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

[Animal behaviour and Chronobiology]

Group - A

Answer any *five* of the following questions :

5×2=10

1. Give examples of two eusocial insects.
2. What is altruism?
3. State any two advantages of pheromone in animal communication.
4. Distinguish between innate and learned behaviour.
5. What are sexual conflict?
6. Define Game theory.
7. Define innate release mechanism.
8. Explain photoperiodic axis.

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(2)
Group - B

Answer any *four* of the following questions :
5×4=20

9. Write a short note on 'Handicap Principle' with suitable example.
10. Write down the types and characteristics of Biological rhythms.
11. What are long day seasonal breeder? Discuss the mechanism of seasonal breeding in birds.
12. Explain the role of Serotonin and Melatonin in the regulation of the biological clock of human.
13. Write down chemical and tactile communication of animals with example.
14. Briefly discuss about contribution of Konrad Lorenz in ethology.

Group - C

Answer any *one* of the following questions :
10×1=10

15. Discuss Biological Clock with reference to endogenous pacemaker. Describe Tidal and Lunar rhythms. 5+5
16. How is "round dance" different from "waggle dance"? Discuss briefly about social structure of honey bee. What is chronobiology? 3+5+2

(3)
OR

[Fish and Fisheries]

Group - A

Answer any *five* of the following questions :
2×5=10

1. What is transgenic fish? Give examples.
2. Define aquaculture.
3. Give example of one fishing craft and one fishing gear.
4. Define semi-intensive culture system.
5. How age of a fish can be determined?
6. Name one bioluminescent fish and one fish with electric organ.
7. What are the basic differences between cosmoid and ganoid Scales?
8. Name one viral and one bacterial disease of finfish.

Group - B

Answer any *four* of the following questions : 5×4=20

9. What are the different causes of fisher depletion?
10. Write the differences between Pen and Cage culture.
11. Describe any two fish by products with their uses.
12. Why induced breeding is necessary for fish culture?



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(4)

13. Write the roles of DO (Dissolved Oxygen) and temperature in the culture of fishes.

14. Describe the different types of fins of fish.

Group - C

Answer any *one* of the following questions :

10×1=10

15. (a) Write down the effect of climate change on fish catches in the Bay of Bengal.

(b) Write a brief note on aquarium maintenance. 5+5

16. (a) Describe the types of swim bladder and its function.

(b) Write down the application of remote sensing and GIS in fisheries. 5+5

(5)

OR

[Reproductive Biology]

Group - A

Answer any *five* of the following questions :

2×5=10

1. State function of SOX-9 protein in differentiation of gonad.

2. Mention two key differences between Δ4 and Δ5 pathway of androgen synthesis.

3. What is lactational amenorrhoea?

4. State the function of Cowper's gland in male.

5. Define concealed ovulation.

6. Explain the term 'superovulation'.

7. Mention two progestins that are used as contraceptive.

8. What is ectopic pregnancy? How can it be diagnosed?

Group - B

Answer any *four* of the following questions :

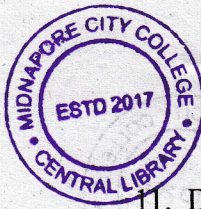
5×4=20

9. What are primary and secondary sex organ of male and female? Mention their significance. 3+2

10. Explain the hormonal regulation of spermatogenesis. Mention the end metabolic product of androgens. 3+2



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11. Describe "two-cell-two-gonadotropin hypothesis". State the function of inhibin in female reproductive system. 3+2
12. Define reflex ovulation. Explain the significance of CRH in initiation of Parturition reflex. 2+3
13. Write short notes on : 2½+2½
- (i) Sperm bank
- (ii) *In vitro* fertilization.
14. Explain the role of placental hormone in regulation of pregnancy. State the function of follistatin. 4+1

Group - C

Answer any *one* of the following questions :

10×1=10

15. Describe the hormonal regulation of human reproductive cycle. Briefly describe the molecular aspect of cortical granule reaction during fertilization. What are the primary physiological factors contributing to male infertility? 5+3+2
16. Explain the significance of blood-testis barrier and its role in spermatogenesis. With suitable diagram, explain the process of androgen synthesis in male reproductive system. Name two non-hormonal contraceptive methods with their mode of action. 4+4+2
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