

2020
ZOOLOGY
[HONOURS]
Paper : XI

Full Marks : 50

Time : 2 Hours

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

1. Answer any **five** of the following: $2 \times 5 = 10$
- What do you mean by head and tail organizer?
 - State the role of Sertoli cells in spermatogenesis.
 - State the function of allantois in chick embryo.
 - Write down the importance of Pentose Phosphate Pathway.
 - Differentiate between meroblastic and holoblastic cleavage.
 - What is Nieuwkoop centre?
 - Distinguish between invagination and epiboly.
 - State the significance of cryopreservation.

2. Answer any **two** questions: $5 \times 2 = 10$
- Classify eggs depending on the amount of yolk present in them. State the role of yolk in cleavage. $3 + 2 = 5$
 - What is the fate of amino acid degradation? What is the major site of this catabolism? State the role of amino transferases? $2 + 1 + 2 = 5$
 - What is fate map? Briefly describe the fate map of chick with suitable diagram. $1 + 4 = 5$
 - With suitable examples describe the process of oxidative and non-oxidative deamination. 5
3. Answer any **three** questions: $10 \times 3 = 30$
- Why oogenesis is called an wasteful process. Give an account of nuclear and cytoplasmic maturation during oogenesis with suitable illustrations. $2 + 3 + 5 = 10$
 - Classify placenta based on the degree of involvement of foetal and maternal tissues. State the functions of placenta. $5 + 5 = 10$
 - Why TCA cycle is amphibolic nature? Draw a flow diagram showing the reactions and

pointing out where ATP, H₂O and CO₂ are formed in this cycle. 2+5+3=10

- d) What is syncytiotrophoblast? Describe the formation of placenta in Eutherian mammal. Name two hormones synthesized by syncytiotrophoblastic layer. 2+6+2=10
- e) What is primitive streak? Describe in brief the process of formation of primitive streak in chick. State the role of dorsal lip of blastopore during gastrulation in frog. 2+4+4=10
