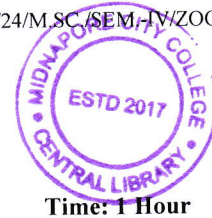


PG (CBCS)
M.SC. Semester- IV Examination, 2026
ZOOLOGY
PAPER: ZOO 403
(DEVELOPMENTAL BIOLOGY)



Full Marks: 20

Time: 1 Hour

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

GROUP-A

Answer any **TWO** of the following questions: 2×2=4

- 1. State the role of nAG protein in regeneration.
- 2. What is the major sperm binding glycoprotein in mouse zona pellucida?
- 3. In which area noggin mRNA is expressed in amphibian embryo?
- 4. What happens if Frzb protein is overexpressed in *Xenopus* embryo?

GROUP-B

Answer any **TWO** of the following questions: 2×4=8

- 5. Describe the process of muscle cell differentiation in newt limb regeneration.
- 6. How is BMP signaling inhibited in *Xenopus* embryo?
- 7. Explain the function of phospholipase C in sea urchin egg metabolism.
- 8. How it can be proved the head region of Hydra produces an inhibitory signal that fails off with distance?

GROUP-C

Answer any **ONE** of the following questions: 1×8=8

- 9. Discuss the mechanism of dorsal-ventral axis formation in *Xenopus*, including the role of β -catenin and TGF- β signaling. 4+4
- 10. Discuss the structure and function of zona pellucida proteins in mammalian fertilization. 4+4

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