FIVE YEAR INTEGRATED M.Sc. EXAMINATION 2024
SEMESTER – V
Paper: LS-3-5-5
(Developmental Biology)

Time: Three Hours **Full Marks: 40**

Questions are of values as indicated in the margin

Answer **Question No.01** and **any three** from the rest

1. Write answer **any ten** of the following: 10x1=10
   (a) What is spermiogenesis?
   (b) Why acrosome and cortical granules are called homologus structures?
   (c) State the function of dynein of spermatozoa.
   (d) Name the zona pellucida proteins.
   (e) What is a paracrine factor?
   (f) Define morphogen.
   (g) Distinguish between ingression and involution.
   (h) What is spiral cleavage? Give an example.
   (i) What do you understand by fate map of an embryo?
   (j) Define stem cell.
   (k) Give example of a microlecithal and a mesolecithal egg.
   (l) State the importance of blastocoel.
2. (a) Delineate the role of stra 8 in gametogenesis. 5
   (b) Write a note on acrosome reaction in sea urchin. 5
3. (a) Describe the ultrastructure of axoneme with diagram. 2+3
   (b) What is germinal vesicle? Narrate the molecular mechanism of germinal vesicle break down. 1+4
4. (a) Discuss the role of resact in fertilization of sea urchin. 2
   (b) Add a note on cortical granule reaction in sea urchin. 5
   (c) What are the features added to mid-blastula transition? 3
5. (a) Describe the cleavage of frog with the help of suitable diagram. 4+2
   (b) Elaborate the process for formation of grey crescent. 4
6. (a) What is vegetal rotation? 2
   (b) Describe morphogenetic movement of cells from the dorsal blastopore lip in an amphibian embryo with necessary diagrams. 5+3
