

Reg. No. :

Name :

**Sixth Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular/
Supplementary/Improvement) Examination, April 2025
(2019 to 2022 Admissions)
CORE COURSE IN ZOOLOGY
6B12ZLG : Developmental Biology**

Time : 3 Hours

Max. Marks : 40

- I. Essay questions. **Each** question carries **8** marks. Answer **any two** :
- 1) Write an essay on the blastulation and gastrulation in the development of frog.
 - 2) Describe different morphogenetic movements in detail.
 - 3) Write an essay about the types of metamorphosis in insects and add the hormonal control of metamorphosis in insects.
 - 4) Write an essay on the different types of cleavage of eggs with suitable examples. **(2×8=16)**
- II. Short essay questions. **Each** question carries **4** marks. Answer **any two**.
- 5) Briefly describe in vitro fertilization and embryo transfer techniques employed in infertility management.
 - 6) Write notes on different types of blastula.
 - 7) Explain stem cells, their significance and applications in biology. **(2×4=8)**
- III. Short answer questions. **Each** question carries **2** marks. Answer **any six** :
- 8) What is meant by capacitation ?
 - 9) Differentiate between totipotency and pluripotency.
 - 10) Write notes on any four features of 48 hour chick embryo.
 - 11) Write down the role of hormones in parturition.
 - 12) What is meant by teratogens, write any two teratogens and its effects in the development of an embryo ?
 - 13) Write down the role of primary organizer in amphibian development.
 - 14) What is meant by regeneration ?
 - 15) What is parthenogenesis ? **(6×2=12)**

P.T.O.

IV. Multiple choice questions. **Each** question carries **0.5** marks. Answer **all**.

- 16) Germplasm theory was put forwarded by

a) August Weismann	b) Spemann
c) Earnst Haeckel	d) Gregor Mendel
- 17) Capacitation of the sperm _____

a) Is caused by the zona pellucida
b) Occurs in the male
c) Prevents polyspermy
d) Is essential for fertilization
- 18) The early stage of cleavage is characterized by the

a) Formation of a hollow ball of cells
b) Formation of the zona pellucida
c) Increase the size of the cells in the zygote
d) Increase the number of cells in the zygote
- 19) The lining of the uterus in which the embryo implants itself called the

a) Myometrium	b) Trophoblast
c) Endometrium	d) Yolk plug
- 20) Urine pregnancy test detects the presence of

a) Estrogen	b) Progesterone
c) Human chorionic gonadotropin	d) Prolactin
- 21) Metamorphosis in amphibians is triggered by environmental factors like temperature and light that stimulate the action of

a) Thyroid	b) Pituitary
c) Hypothalamus	d) Adrenal
- 22) Minamata disease was caused by the bioaccumulation of

a) Mercury	b) Lead
c) Zinc	d) Sulphur
- 23) Type of cleavage in insect egg is

a) Holoblastic equal cleavage	b) Meroblastic superficial cleavage
c) Holoblastic unequal cleavage	d) Meroblastic discoidal cleavage

(8×0.5=4)