2023/08

SET A

B.Sc. ZOOLOGY
SIXTH SEMESTER (SPECIAL REPEAT)
DEVELOPMENTAL BIOLOGY
BSZ-601
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

(Objective)

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. Which one of the following chemical substances is secreted by sperm at the beginning of fertilization to make itself attached to the ovum?
   a. Sperm lysine b. Fertilizin
   c. Antifertilizin d. Acrosomal granules

2. Maternal part of mammalian placenta is called:
   a. Chorion b. Myometrium
   c. Endometrium d. Allantois

3. Sperm mother cells are termed as:
   a. Spermatogonia b. Spermatid
   c. Spermatocyte d. Spermatozoon

4. Blastula of mammal is called:
   a. Coeloblastula b. Periblastula
   c. Blastocyst d. Discoblastula

5. Which one of the following cell organelles takes part in acrosome formation during spermiogenesis?
   a. Mitochondria b. Centriole
   c. Ribosome d. Golgi complex

6. In chick embryo, function of amniotic cavity is to:
   a. Supply nutrition to embryo b. Supply oxygen
   c. Protects embryo from desiccation d. Acts as urinary storage

7. n chick embryo, which one of the following extra-embryonic membranes serves as receptacle for excretory products?
   a. Yolk sac b. Amnion
   c. Allantois d. Chorion

8. Which one of the following is not the function of egg membrane?
   a. Protection from external injury b. Prevent entry of sperm
   c. Prevent self fertilization d. Protection from harmful radiation

9. Micromeres and macromeres are found in the blastula of:
   a. Amphibia b. Bird
   c. Insect d. Mammal

10. In centrolecithal egg, cleavage pattern is:
    a. Spiral
    b. Radial
    c. Superficial
    d. Rational

11. Statement I: The preformation theory was postulated by Marcello Malpighi.
    Statement II: According to this theory, the various parts of the embryo were contained in the egg and became visible as they increased in size.
    a. Both Statement I and II are true
    b. Both Statement I and II are false
    c. Statement I is true but statement II is false
    d. Statement I is false but statement II is true

12. Spemann's investigation into the behaviour of isolated blastomeres of the two-celled newt egg revealed that halves separated along the median plane developed into:
    a. Incomplete embryos
    b. Half embryo
    c. Complete embryo
    d. None of the above

13. The phenomenon in which cells and other parts become different from one another is called:
    a. Auxetic growth
    b. Multiplicative growth
    c. Accretionary growth
    d. Differentiation

14. Which one is a growth promoting factor?
    a. Embryonic factors
    b. Hormones
    c. Vitamins
    d. All of these

15. In planarians, during the early phases of regeneration, a stock of undifferentiated cells .....divide actively by mitosis and migrate toward the zones of injury.
    a. Neoblasts
    b. Interstitial cells
    c. Metaplasia
    d. None of the above

16. Statement I: Juvenile hormone is secreted by corpora cardiaca.
    Statement II: Juvenile hormone causes molting.
    a. Both Statement I and II are true
    b. Both Statement I and II are false
    c. Statement I is true but statement II is false
    d. Statement I is false but statement II is true

17. Maturation occurs:
    a. Teenage years
    b. Infant years
    c. After age 30
    d. Young years

18. Metamorphosis is a .....extension of the developmental potential.
    a. Pre-embryonic
    b. Embryonic
    c. Post embryonic
    d. None of these

19. The germ plasm theory was proposed by:
    a. Waldeyer
    b. Weismann
    c. Roux
    d. Spemann

20. The normal sequence of events in embryology are:
    a. Gametogenesis, Fertilisation, Cleavage, Gastrulation
    b. Cleavage, Fertilisation, Gametogenesis, Gastrulation
    c. Gametogenesis, Cleavage, Fertilisation, Gastrulation
    d. Fertilisation, Gametogenesis, Cleavage, Gastrulation

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(Descriptive)

Time : 2 hr. 30 mins. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Write short notes on: (*any two*) 5+5=10
   a) Placenta
   b) Asymmetric cell division
   c) IVF
2. Write about the types of eggs based on amount and distribution of yolk with examples. 5+5=10
3. What is blastula stage? Describe briefly the types of blastula. 2+8=10
4. Write the development of extra embryonic membranes in bird. Mention their appropriate functions. 7+3=10
5. How does insect metamorphosis take place? Describe the various types of insect metamorphosis and the hormonal control. 2+2+6=10
6. What do you mean by epimorphosis? Describe limb regeneration in salamander with proper illustration. 2+4+4=10
7. What are the features that define growth data? Explain factors controlling growth and growth promoting factors. 5+5=10
8. Who is a candidate for amniocentesis? What can be detected through an amniocentesis? 5+5=10

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