

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: Zoology
Paper name: Developmental Biology
Paper No: XIX
Semester: VI

A. Multiple choice questions [25 (5 from each unit)]

1. The shape of the head of human sperm is

- a) spear shaped
- b) pear shaped
- c) oval
- d) cylindrical

2. Vitelline membrane is a

- a) primary egg membrane
- b) secondary egg membrane
- c) tertiary egg membrane
- d) quaternary egg membrane

3. One of the fundamental requirements for the encounter of spermatozoa and egg during fertilization is

- a) fluid medium
- b) dry medium
- c) jelly-like medium
- d) none

4. Parthenogenesis helps to produce

- a) haploidy
- b) diploidy
- c) both
- d) polyploidy

5. In centrolecithal eggs, the usual type of cleavages is

- a) holoblastic
- b) meroblastic
- c) spiral
- d) superficial

6. The blastulae of Amphioxus and frog are

- a) coeloblastula
- b) stereoblastula
- c) amphiblastula
- d) discoblastula

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7. The cells along the external margin of blastoporal lip move over the lip to the inside edge of the lip. This is called
- invagination
 - involution
 - convergence
 - conrescence
8. Vital staining technique was discovered by
- Vogt
 - Spratt
 - Hotta and Benzer
 - Waddington
9. In placenta if the allantois is not present, it is called as
- chorionic
 - allantoic
 - chorio-vitelline
 - chorio-allantoic
10. After 24 hrs of incubation of chick's egg the number of mesodermal somites is
- 2
 - 3
 - 4
 - 5
11. Mesodermalizing agent is required for differentiation according to:
- Gradient theory
 - Protein denaturation theory
 - One factor theory
 - Ionic theory
12. Genetic basis of neural induction involves
- DNA
 - RNA
 - Actinomycin-D
 - All of these
13. Double gradient systems control morphogenesis and :
- differentiation
 - cleavage
 - blastulation
 - gastulation
14. During morphogenetic movements, the ectodermal cells of the animal half are spreading out by a process called
- delamination

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- b) emboly
 - c) epiboly
 - d) None
15. An area which is committed to develop into a particular organ is called
- a) Delamination
 - b) Organiser
 - c) Morphogenetic field
 - d) Transition
16. The time interval between successive moults is called
- a) instar
 - b) stadium
 - c) inter moult
 - d) none
17. The hormone involved in the metamorphosis of tadpole is
- a) prolactin
 - b) thyroxine
 - c) TSH
 - d) somatotrophin
18. Growth, moulting and onset of metamorphosis in insects is controlled by :
- a) TSH
 - b) ecdysone
 - c) juvenile hormone
 - d) Growth hormone
19. Regeneration is similar to :
- a) autotomy
 - b) differentiation
 - c) cleavage
 - d) divisions
20. Among annelids, following animals never regenerates :
- a) Earthworm
 - b) Allolobophora
 - c) Leech
 - d) Polychaetes
21. The branch of study dealing with old age and aging is called as :
- a) Oncology
 - b) Gerontology
 - c) Teratology
 - d) None

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22. Man has an average life span of 100 years that is set by a group of :
- growth genes
 - lethal genes
 - terminator genes
 - death genes
23. Transgenesis can be done by
- DNA micro-injection
 - Stem cell mediated gene transfer
 - Retrovirus mediated gene transfer
 - All of them
24. The form of cell transformation which involves a change in the genome itself is called
- Teratogens
 - Metastases
 - Neoplasia
 - Carcinogens
25. Stem cells have
- undifferentiated cells
 - high self-renewal capacity
 - multi-lineage differentiation potential
 - All of them

B. Fill up the blanks [15 (3 from each unit)]

- Spermatozoa get attracted to the ovum by the process of
- In man the life span of sperm in female genital tract is
- Parthenogenesis helps to avoid in the races.
- The peripheral cells and syncytial layer lying beneath the cavity of discoblastula is called
- The migration of cells from outer surface of blastula to external margin of blastoporal lip is
- The chick hatches out onday.
- The existence of organizer in amphibian egg was discovered by.....
- In the fertilized egg, the grey crescent acts as.....
- In axial gradient system, the metabolism is higher at pole.
- Two hormones responsible for Insect metamorphosis areand
-and morphallactic regeneration are synonym.
- Drosophila melanogaster*, like all insects have Hox genes.
- With age, chaperones accumulation.....in tissue.
- Mesenchymal stem cells are responsible for.....
- are the most basic and fundamental cells one can find in a human body.

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Key Answers

A. Multiple choice questions [replace x]

1. b) 2. a) 3. a) 4.d) 5. d) 6.a) 7. b)
8. a) 9. a) 10. b) 11. a) 12. d) 13. a) 14. c)
15. c) 16.b) 17. b) 18. c) 19. a) 20. c) 21. b)
22. d) 23. d) 24. c) 25. d)

B. Fill up the blanks [replace x]

1. chemotaxis
2. 24 hrs
3. .sterility
4. periblast
5. convergence
6. 21st day
7. Spemann
8. the organizer
9. animal
10. Ecdysone and juvenile hormone
11. Morphallaxis
12. 8
13. increases
14. tissue regeneration in brain
15. Stem cells

Caroline Zaihmingthangi
Zoology Department
GZRSC