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Register Number:

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**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**B.Sc., ZOOLOGY – VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2017**

**ZO 6212- Developmental Biology and Evolution**

**Time: 3 hrs** **Maximum marks: 100**

*This question paper has* ***TWO*** *printed pages and* ***THREE*** *parts*

**PART A**

**I. Answer the following questions. Each question carries 1 mark 1X20=20**

1. The arrangement of granules results in the formation of germ layers according to \_\_\_\_\_\_

a) Muller b) Wolff c) Malphigi d) Swammerdam

2. Superficial cleavage resulting in the formation of syncitium is seen in the development of

 a) Insects b) Amphibians c) Aves d) Mammals

3. \_\_\_\_\_\_\_\_\_ uses embryology to explain the process of evolution.

a) Biogenetic law b) Pre-formation theory c) Von Baer’s law d) Both A & C

4. A distinct morula stage is not seen in the development of \_\_\_\_\_\_\_\_\_\_\_.

 a) Amphioxus b) Frog c) Chick d) Both A & B

5. \_\_\_\_\_\_\_\_\_\_\_ is responsible for the formation of embryo proper in chick.

a) Epiblast b) Hypoblast c) Both A & B d) None of these

6. An archenteron is formed in the gastrula as a result of \_\_\_\_\_\_\_\_\_\_\_.

a) Convergence b) Epiboly c) Invagination d) None of these

7. Proliferation of micromeres on the surface of the embryo is \_\_\_\_\_\_\_\_\_\_

 a) Involution b) Divergence c) Convergence d) Epiboly

8. The tertiary sheath of notochord is derived from \_\_\_\_\_\_\_\_\_\_

a) Sclerotome b) Dermatome c) Myotome d) Nephrotome

9. The foetal membrane formed from the embryonic splanchnopleure is \_\_\_\_\_\_\_\_\_.

a) Amnion b) Chorion c) Allantois d) None of these

10. The function of trophoblast cells in the blastula stage of a mammalian embryo is

a) Excretion b) Respiration c) Nutrition d) Protection

11. Corpus luteum is formed from \_\_\_\_\_\_\_\_\_\_\_\_.

a) Theca interna b) Graffian follicle c) Granulosa cells d) Trophectoderm

12. FSH is produced by \_\_\_\_\_\_\_\_\_.

a) Male b) Female c) Both A & B d) None of these

13. \_\_\_\_\_\_\_\_\_ is a secretion of the acidophilic cells in the adenohypophysis.

a) Prolactin b) Progesterone c) ICSH d) Estrogen ZO-6212-B-17

14. The law of ‘use and disuse’ was proposed by \_\_\_\_\_\_\_\_\_

a) Darwin b) Weismann c) Dobzhansky d) Lamarck

15. Sudden change in gene frequency is due to \_\_\_\_\_\_\_\_\_\_.

a) Hybridization b) Recombination c) Genetic drift d) All of these

16. Evolution is possible because of \_\_\_\_\_\_\_\_\_.

a) Mutation b) Variation c) Natural selection d) All of these

17. Ancient cephalopods are \_\_\_\_\_\_\_\_\_.

a) Ammonites b) Trilobites c) Ostracoderms d) Placoderms

18. \_\_\_\_\_\_\_\_\_ is the toothed bird appeared during Jurassic period.

a) Sphenodon b) Ichthyornis c) Archaeopteryx d) Hesperornis

19. The unique Australian fauna comprises of \_\_\_\_\_\_\_\_\_\_.

a) Monotremes b) Marsupials c) Both A & B d) None of these

20. Ungulates and carnivores were established during \_\_\_\_\_\_\_\_\_ epoch.

a) Paleocene b) Eocene c) Miocene d) Pleistocene

**PART B**

**II. Answer any EIGHT questions. Each question carries 5 marks 5X8=40**

21. Comment on the process of blastulation in amphioxus.

22. Write short notes on different types of cell movements during gastrulation.

23. What is reciprocal induction? Explain.

24. Explain the fate of hypomere during mesogenesis.

25. Briefly explain the various changes taking place in the uterus during the secretory phase.

26. How is the process of cleavage influenced by yolk? Explain.

27. Explain directional selection with the aid of suitable examples.

28. Give a brief account of different types of fossils.

29. Differentiate between Eohippus and Equus.

30. What are the salient features of Neanderthal man?

**PART C**

**III. Answer any FOUR questions. Each question carries 10 marks 4X10=40**

31. With the help of a neat labeled diagram, explain the evolutionary significance of cleidoic egg.

32. Explain the role of organizers at various stages of development in an Amphibian embryo. Add a note on the transplantation experiments.

33. Define placenta. Classify Placenta on the basis of histology. Add a note on placental hormones and its functions.

34. ‘Hardy-Weinberg equilibrium cannot be attained’. Substantiate the statement.

35. Explain in detail, various isolating mechanisms resulting in the origin of new species.

36. Critically analyze the morphological and anatomical evidences in favor of evolution.