SHIVARAJ COLLEGE OF ARTS, COMMERCE &
D. S. KADAM SCIENCE COLLEGE, GADHINGLAJ.
B.Sc (Part I) (Semester II) (C.B.C.S) Examination

Class	: **B. Sc. I**	Semester	: **III**
Subject	: **Zoology**	Paper No	: **III**
Paper Name	: **Cell Biology & Evolutionary Biology**	Subject Code	: **72846**

Q.1. Rewrite the following sentences by choosing correct alternative. (10 MCQ) 10M

1. The smallest cell belongs to genus ……
   A) Asterias B) **Mycoplasma**
   C) Amoeba D) Ascaris

2. The fluid mosaic model of plasma membrane was proposed by …….
   A) **S.J. Singer & G.L. Nicolson** B) Robert Hook
   C) Robert Brown D) Darwin

3. …… are two units of measurement of cell sizes
   A) Milligram & Microgram B) Gram & Kilogram
   C) **Micron & Angstron** D) Meter & Kilometer

4. Under electron microscope the chromatin shows a 'string of beads' named as …….
   A) **Chromosomes** B) Nucleosomes
   C) Somites D) Genes

5. ……. Serves as barrier between the nucleus and cytoplasm
   A) **Nuclear envelope** B) Plasma membrane
   C) Nuclear membrane D) Cell membrane

6. The ……. is heart of cell.
   A) Mitochondria B) Golgi complex
   C) **Nucleus** D) Ribosomes

7. A constricted part of chromosome, where the arms of chromosome meet is called as …….
   A) Chromatids B) Chromomeres
   C) Genes D) **Centromeres**

8. Darwin's finches are found on …….
   A) Andman islands B) Nicobar island
   C) **Galapagos islands** D) Sri lankan islands

9. ……. Is fundamental, structural and functional unit of living organisms?
   A) Bones B) **Cells**
   C) Organs D) None of the above

10. The somatic cells contain …… sets of chromosomes
   A) 1 B) **2**

C) 3 D) 4

11. …… plays a role in the formation of acrosome during spermeogenesis
A) **Golgi complex** B) Nucleus
C) Endoplasmic reticulum D) Mitochondria

12. Deccan trap formation is supposed to be due to ……..
A) Earthquakes B) Stroms
C) Tsunamis D) **Flood basalt lava**

13. The outer membrane and inner membrane of the nucleus are separated by ……..
A) **Perinuclear space** B) Perinuclear chromatin
C) Internucleolar chromatin D) Nuclear Envelope

14. The dinosaurs rulled the earth during …… period
A) **Jurassic** B) Devonian
C) Cambrian D) Permian

15. When ribosomes are present in large number on the wall of endoplasmic reticulum, then it is called…….
A) Smooth Endoplasmic reticulum B) Rough Ribosomes
C) **Rough Endoplasmic reticulum** D) All of above

16. ……. Are 'V' shaped chromosomes having two nearly equal arms
A) Submetacentric B) **Metacentric**
C) Acrocentric D) Telocentric

17. The theory of natural selection for organic evolution is put forword by ……
A) De Vries B) Lamarck
C) **Darwin** D) Mendel

18. The salivary gland chromosomes exhibit swellings which have called…….
A) Knobs B) Puffs
C) Balbiani rings D) **All of the above**

19. Fossilized footprints are the type of …….
A) Moulds B) Petrification
C) Casts D) **Ichnofossils**

20. The condition in which the chromosome sets are present in multiples of 'n' is called as ……
A) **Polyploidy** B) Diploids
C) Triploids D) Euploidy

21. The term 'great dying' is usd for ……
A) K-T extinction B) Devonian extinction
C) Extinction of Dinosaurs D) **Permian – Triassic extinction**

22. …….. are called ‘The Power House’ of cells

A) Lysosomes B) Golgi complex

C)Ribosomes D) **Mitochondria**

23. The darkly stained, condensed region of chromatin is known as ……..

A) **Heterochromatin** B) Euchromatin

C) Chromatin D) None of above

24. In ……. Polytene chromosome is 1000 times larger than the somatic chromosome

A) **Drosophila** B) Grasshopper

C) Housefly D) Beetle

25. …….. was formulated in 1839 by two Germen scientists, Schleiden and Swann

A) Theory of evolution B) Cell theory

C) Theory of Evolution of life D) Theory of origin of life

26. The first compound microscope was built by ……, who used the term cell in 1665

A) **Robert Hook** B) Robert Brown

C) Purkinje D) Theoder Swann

27. ……. Is the membrane bound cell organellae, having genetic material and various proteins.

A) Lysosome B) Nucleolus

C) **Nucleus** D) Ribosomes

28. Each chromosome consists of two symmetrical spirally coiled and filamentous structure called as …….

A) **Chromatids** B) Chromomeres

C) Genes D) Centromeres

29. Use and disuse theory of organic evolution is put forword by …….

A) Darwin B) Wallace

C) De Vries D) **Lamarck**

30. The number of chromosomes in man is……..

A)48 B) 47

C)**46** D) 60

31. Radioactive carbon ^{14}C decays into ……..

A) Cobalt B) Calcium

C) **Nitrogen** D) Uranium

32. The outer membrane and inner membrane of the nucleus are separated by ……..

A) **Perinuclear space** B) Perinuclear chromatin

C) Internucleolar chromatin D) Nuclear Envelope

33. The dinosaurs rulled the earth during …… period

A) **Jurassic** B) Devonian
C) Cambrian D) Permian

34. Lysosomes are also called as…….

A) **Suicide bags** B) Pollen bags
C) Power house D) None of above

35. ……. Are 'L' shaped chromosomes having two unequal arms

A) **Submetacentric** B) Metacentric
C) Acrocentric D) Telocentric

36. Presence of whole sets of chromosomes is called ……

A) Haploids B) **Diploids**
C) Triploids D) Euploidy

37. …….. are filamentus or thread like or rod shaped bodies present in the nucleus.

A) Nucleolus B) **Chromosomes**
C) Genes D) Mitochondria

38. ..... Radioactive elements are used for study of dating of fossils.

A) Urenium B) Rubidium
C) Potassium D) **All of the above**

39. Radiactive Uredium-238 is decay into ----------

A) Cobalt B) Carbon
C) **Lead** D) Potassium

40. The half-life of uranium- 238 is about -------

A) **4.5 billion years** B) 5.1 billion years
C) 5.7 billion years D) 5.4 billion years

41. What is a fossils?

A) A type of rock B) A form of sediments
C) Living organism D) **Preserved remains of ancient life**

42. Which part of an organism are more likely to become fossilized?

A) Only teeth B) **Hard part of organism**
C) Soft part of organism D) only hairs

43. Woolly Mammoth is the example of .....

A) **Unaltered fossils** B) Petrification
C) Casts D) Ichnofossils

44. --------- is the branch of study of Fossils.

A) **Palentology** B) Pedology
C) Archaeology D) Anthropology

45. ..... is a crater to have caused the mass extinction of dinosaurs.

A) **Chicxulub crater** B) Meteor crater
C) Popigai Crater D) Vredefort crater

46. Oxysomes or F1 particles are present in ----------.

A) **Mitochondria** B) Golgi complex
C) Nucleus D) Ribosomes

47**.** Glycolysis is takes place in .....

A) Mitochondria B) Cell Cytoplasm
C) Nucleus D) Ribosomes

48. Kreb cycle is takes place in .....

A) **Inner matrix of mitochondria** B) Cell Cytoplasm
C) Outer matrix of mitochondria D) On F1 particles

49. ------- is role to give mechanical support to the cell.

A) Lysosomes B) Golgi complex
C)Ribosomes D) **Endoplasmic reticulum**

50. ..... is the smallest cell.

A) Hepatic cells B) Red blood cells
C) Egg of Ostrich D) **Sperm cells**

Q.2. Long answer question (Any 2 out of 3) 20M

1. Describe the morphology, position and size of nucleus and add a note on functions of nucleus.

2. Give an account of morphology and classification of chromosome. Describe solenoid model of chromosome structure.

3. Describe Ultrastructure, chemical composition and function of fluid mosaic model.

4. Give an account of the ultrastructure and functions of mitochondria.

5. Give an account of the ultrastructure and functions of Endoplasmic reticulum

6. Give an account of the ultrastructure and functions of Lysosome.

7. Describe the morphology, origin and chemical composition of Golgy complex

8. Give an account of Lamarckism.

9. What is Fossils? Describe the types of fossils.

10. What is dating of the fossils? Give an account of the different methods of the dating of the fossils.

11. What is evolution? Give an account of theories of origin of life.

12. What is mass extinction? Give an account of mass extinction occurred in different periods.

Q.3. Short answer question (Any 4 out of 6) 20M

1. Nucleolus

2. Polytene chromosome

3. Structure of chromosome

4. Euchromatin & Heterochromatin

5. Endoplasmic reticulum

6. Functions of Plasma membrane

7. Endocytosis & Exocytosis

8. Golgi complex

9. Account on Lysosome is suicidal bags

10. Functions of Lysosome

11. Cell theory

12. Origin of cell

13. Lamark theory of evolution

14. Natural selection theory of evolution

15. Dating of fossils

16. Types of fossils

17. Darwinisms and Neo-darwinism theory

18. Millers and Urey's experiments

19. Chemical evolution
20. Chemical composition of plasma membrane
21. Structure of Nucleus and its function
22. Prokaryotic cell
23. Eukaryotic cell
24. Shape and Size of cells