Olympiad Foundation

SAMPLE PAPER CLASS 12th

OLYMPIAD FOUNDATION

SCIENCE OLYMPIAD

Division of Marks

S.No.	Topic/Section	No. of Question	Marks
1	Physics	10	10
2	Chemistry	10	10
3	Biology	15	15
4	Achievers Section	03	15
	Total	38	50

INSTRUCTIONS :

1. Use Blue/Black ballpoint pen only to darken the appropriate circle.
2. Mark should be dark and should completely fill the circle.
3. Dark only one circle for each entry.
4. Dark the circle in the space provided only.
5. Rough work must not be done on the answer sheet and do not use white- fluid or any rubbing material on Answer Sheet.
6. Each question carries one mark.

TIME: 1 Hour **M.M.: 50**

Select the correct answer and darken your answer in the table :

PHYSICS

1. When an electric dipole is placed in uniform electric field, it experiences:

   (A) force only (B) Torque only

   (C) Both force and torque (D) Neither force not torque

2. What is the charge on a mental, when 5 electrons are removed from it?

   (A) 8.0×10^{-19}C (B) 16×10^{-19}C

   (C) 1.6×10^{9}C (D) 0

3. S.I Unit of electric capacitance is :

   (A) A coulomb (1C) (B) A volt C (IV)

   (C) A farad (If) (D) A volt metre (IV-m)

4. Current flows in the semi - conductors through :

   (A) Protons (B) Electrons

   (C) Holes (D) Holes and electrons

5. The resistivity of semi conductor _____ will increase in temperature.

   (A) Incresase (B) Decreases

   (C) May increase or decrease (D) No change

6. If a current is passed in a spring it :

   (A) Gets compressed (B) Gets Expanded

   (C) Oscillates (D) None of these

7. The angle of dip at magnetic equator is :

   (A) 90° (B) 45°

   (C) 30° (D) 0°

8. Which of the following is a ferromagnetic substance?

(A) Zinc (B) Alnico

(C) Chromium (D) Magnesium

9. A Solenoid has n twens, its coefficient of self inductance L x n

(A) $L \propto n$ (B) $L \propto n^2$

(C) $L \propto n^{-1}$ (D) $L \propto n^{-2}$

10. Which of the following has the least wave length ?

(A) Y-rays (B) B-rays

(C) α-rays (D) X-rays

CHEMISTRY

11. How many chloride ions are surrounding sodium ion in sodium chloride crystal?

(A) 4 (B) 8 (C) 6 (D) 12

12. The law which indicates the relationship between solubility of a gas in liquid and pressure is

(A) Raoult's law (B) Henry's law

(C) Lowering of vapour pressure (D) Van't hoft law

13. Fused Nacl on electrolysis gives _____ on cathode.

(A) Chlorine (B) Sodium

(C) Sodium amalbam (D) Hydrogen

14. The unit of rate and rate constant are same for a

(A) Zero order reaction (B) First order reaction

(C) Second order reaction (D) Third order reaction

15. The potential difference b/w the fixed charged layer and the diffused layer having opposite charge is called

(A) Zeta potential (B) Electro kinetic potential

(C) Both a and b (D) Steaming potential

16. Concentration of sulphide ore is done by

(A) froth flotation process (B) Electrolysis

(C) Roasting (D) None of these

17. Boron shows diagonal relation with

(A) Al (B) C

(C) Si (D) Sn

18. Which of the following are d block elements but not regarded as transition elements?

(A) Cu, Ag, Au (B) Zn, Cd, Hg

(C) Fe, Co, Ni (D) Ru, Rh, Rd

19. Trunbull's blue is

(A) Ferricyanide (B) Ferrous Ferricyanide

(C) Planets (D) fe3[fe(CN)6]4

20. Sn' reaction of alkyl holides lead to

(A) Ratention of configuration (B) Racemistion

(C) Innersion of configuration (D) None of these

BIOLOGY

21. Which of the following organisms has the highest number of chromosomes?

(A) Housefly (B) Butterfly

(C) Ophioglossum (D) Onion

22. The female gametophyte of a typical dicot at the time of fertilisation is-

(A) 8- celled (B) 7- celled

(C) 6- celled (D) 5- celled

23. After ovulation Graafian follicle regresses into-

(A) Corpus atresia

(B) Corpus callosum

(C) Corpus luteum

(D) Corpus albicans

24. A national level approach to build up a reproductively healthy society was taken up in our country in-

(A) 1950s

(B) 1960s

(C) 1980s

(D) 1990s

25. zzlzw type of sex determination is seen in-

(A) Platypus

(B) Snails

(C) Cockroach

(D) Peacock

26. The first genetic material could be-

(A) Protein

(B) Carbohydrates

(C) DNA

(D) RNA

27. Analogous organs arise due to-

(A) Divergent evolution

(B) Artificial selection

(C) Genetic drift

(D) Convergent evolution

28. Which of the following is not a lyphoid tissue?

(A) Spleen

(B) Tonsils

(C) Pancreas

(D) Thymus

29. Both in callus and ruspension culture commonly used auxin is :

(A) NAA

(B) IEA

(C) 2-4D

(D) Abscisic acid

30. Which of the following is a non-symbiotic biofertiliser?

(A) VAM
(B) Azotobacter
(C) Rhizobium
(D) Anabaena

31. Who is the father of genetic engineering?

(A) Steward Linn
(B) Stanley cohen
(C) Paul
(D) Kary mullis

32. GEAC Stands for-
(A) Genome Engineering Action Committee
(B) Ground Environment Action Committee
(C) Genetic Engineering Approval committee
(D) Genetic and Environment Approval Committee

33. Science linking heredity with environment is :-

(A) Ecology
(B) Ecophysiology
(C) Genecology
(D) Genetics

34. About 71% of total global carbon is found in-

(A) Oceans
(B) Forests
(C) Grasslands
(D) Agroecosystem

35. Biodiversity Act of India was passed by the Parliament in the year-

(A) 1996
(B) 1992
(C) 2000
(D) 2000

ACHIEVERS SECTION

36. The Dental formula in human beings is

(A) 3 2 2 3
3 2 2 3
(B) 2 1 2 3
(B) 2 1 2 3
(C) 1 2 3 2
1 2 3 2
(D) 1 2 3 2
1 2 3 2

37. $C_2H_5OH + SOCL_2$ Pyridine $C_2H_5cl + So_2 + HCL$
this reaction is known as

(A) Willianmson's

(B) Hofmann's reaction

(C) Mendies reaction

(D) Darzen's reaction

38. A sample of paramagnetic salt contains 2.0 x 1024 atomic dipoles each of diople moment 1.5 10^{-23} JT^{-1}. The sample is placed under a homogeneous magnetic field of 0.64 T and cooled to a temperature of 4.2 K. The degree of magnetic. Saturation achieved is equal to 15% what is the total dipole moment of the sample for a magnetic field of 0.98 T and a temperature of 2.8 K? (Assume curie's law)

(A) 110.2 JT

(B) 10.336 JT^{-1}

(C) 12.10 J

(D) None of these

ANSWER KEY

1.	B	11.	C	21.	C	31.	C
2.	A	12.	B	22.	B	32.	C
3.	A	13.	B	23.	C	33.	C
4.	D	14.	A	24.	A	34.	A
5.	A	15.	A	25.	D	35.	C
6.	A	16.	A	26.	D	36.	B
7.	D	17.	C	27.	D	37.	D
8.	B	18.	B	28.	C	38.	B
9.	B	19.	B	29.	C		
10.	A	20.	B	30.	B		