

# Edge Educellence

## Sample Paper

(Class XII studying/XII<sup>th</sup> Passed )

(Medical)

### IMPORTANT INSTRUCTIONS

#### A. GENERAL:

- Please read the instructions given for each question carefully and mark the correct answers against the question numbers on the answer sheet in the respective subjects.
- Duration of Test is 1 Hour.
- This Test contains 40 questions divided in 3 sections. Section I contains questions of Physics and Section II contains questions of Chemistry and Section III contains questions of Biology.
- Maximum marks are 80.

#### B. MARKING SCHEME :

Each subject in this paper consists of following 3 types of sections :-

##### ***SECTION - I***

- The section contains **13** questions.
- Each question has four options. ***Only one*** of the four option is correct.
- For each question, marks will be awarded in one of the following categories :  
Full Marks : +2, If only the correct options is marked.  
Zero Marks : 0, In all other cases.

##### ***SECTION - II***

- The section contains **13** questions.
- Each question has four options. ***Only one*** of the four option is correct.
- For each question, marks will be awarded in one of the following categories :  
Full Marks : +2, If only the correct options is marked.  
Zero Marks : 0, In all other cases.

##### ***SECTION - III***

- The section contains **14** questions.
- Each question has four options. ***Only one*** of the four option is correct.
- For each question, marks will be awarded in one of the following categories :  
Full Marks : +2, If only the correct options is marked.  
Zero Marks : 0, In all other cases.

***All the Best!***



11. A pair of adjacent coils has a mutual inductance of 1.5 H. If the current in one coil changes from 0 to 20 A in 0.5 s, change of flux linkage with the other coil is  
 (a) 45 Wb                      (b) 35 Wb                      (c) 40 Wb                      (d) 30 Wb
12. A uniformly wound long solenoid of inductance  $L$  and resistance  $R$  is broken into two equal parts in the ratio  $\frac{n}{1}$ , which are then joined in parallel. This combination is then joined to a cell of emf  $\varepsilon$ . The time constant of the circuit is  
 (a)  $\frac{L}{R^2}$                       (b)  $\frac{L}{R}$                       (c)  $\frac{2L}{R}$                       (d)  $\frac{L}{2R}$
13. A transformer is used to light a 100 W and 110 V lamp from a 220 V mains. If the main current is 0.5 A, the efficiency of the transformer is approximate:  
 (a) 50%                      (b) 90%                      (c) 30%                      (d) 10%

### Section - I (Chemistry)

14. The plant cell will shrink when placed in:  
 (a) hypotonic solution                      (b) water  
 (c) hypertonic solution                      (d) isotonic solution
15. Which one of the following pairs will form an ideal solution?  
 (a) Phenol and aniline                      (b) n - hexane and n - heptane  
 (c) chloroform and acetone                      (d) ethanol and acetone
16. A compound  $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$  undergoes complete dissociation in water. The Van't Hoff factor  $i$  is:  
 (a) 3                      (b) 4                      (c) 9                      (d) 6
17. The conductivity of 0.20 M solution of KCl at 298 K is  $0.0248 \text{ S cm}^{-1}$ . Calculate its molar conductivity.  
 (a)  $124.0 \text{ S cm}^2 \text{ mol}^{-1}$                       (b)  $122.0 \text{ S cm}^2 \text{ mol}^{-1}$   
 (c)  $129.0 \text{ S cm}^2 \text{ mol}^{-1}$                       (d)  $120.0 \text{ S cm}^2 \text{ mol}^{-1}$
18. When  $\text{KMnO}_4$  acts as an oxidizing agent and ultimately forms,  $\text{MnO}_4^{2-}$ ,  $\text{MnO}_2$ ,  $\text{Mn}_2\text{O}_3$  and  $\text{Mn}^{2+}$ , then the number of electrons transferred in each case:  
 (a) 3, 5, 7, 1  
 (b) 1, 3, 4, 5  
 (c) 4, 3, 1, 5  
 (d) 1, 5, 3, 7
19. Electrolysis of dilute aqueous NaCl solution was carried out by passing 10 milliamperere current. The time required to liberate 0.01 mol of  $\text{H}_2$  gas at the cathode is (1 Faraday =  $96500 \text{ C mol}^{-1}$ )  
 (a)  $1.93 \times 10^5 \text{ s}$                       (b)  $19.3 \times 10^5 \text{ s}$   
 (c)  $9.34 \times 10^4 \text{ s}$                       (d)  $1.93 \times 10^4 \text{ s}$
20. Unit of rate constant for the zero order reaction is:  
 (a)  $\text{mol}^{-2} \text{ L}^2 \text{ s}^{-1}$                       (b)  $\text{s}^{-1}$   
 (c)  $\text{mol}^{-1} \text{ L s}^{-1}$                       (d)  $\text{mol L}^{-1} \text{ s}^{-1}$
21. The half - life period for a zero order reaction is equal to  
 (where  $[\text{R}]_0$  is initial concentration of reactant and  $k$  is rate constant)  
 (a)  $\frac{2k}{[\text{R}]_0}$                       (b)  $\frac{2.303}{k}$   
 (c)  $\frac{[\text{R}]_0}{2k}$                       (d)  $\frac{0.693}{k}$
22. Which of the following is paramagnetic as well as coloured ion?

- (a)  $\text{Sc}^{3+}$  (b)  $\text{Ti}^{4++}$   
 (c)  $\text{Cu}^+$  (d)  $\text{Cu}^{2+}$
23. Silver ornaments turn black by the presence of which gas in the atmosphere?  
 (a)  $\text{O}_2$  (b)  $\text{N}_2$  (c)  $\text{H}_2\text{S}$  (d)  $\text{Cl}_2$
24. On addition of small amount of  $\text{KMnO}_4$  to concentrated  $\text{H}_2\text{SO}_4$ , a green oily compound is obtained which is highly explosive in nature. Identify the compound from the following.  
 (a)  $\text{MnO}_2$  (b)  $\text{Mn}_2\text{O}_2$  (c)  $\text{Mn}_2\text{O}_3$  (d)  $\text{MnSO}_4$
25. The pair  $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{Br}_2$  and  $[\text{Co}(\text{NH}_3)_4\text{Br}_2]\text{Cl}_2$  will show:  
 (a) Ionization isomerism  
 (b) Hydrate isomerism  
 (c) Coordinate isomerism  
 (d) Linkage isomerism
26. Which of the following species is not expected to be a ligand?  
 (a)  $\text{NH}_4^+$  (b)  $\text{H}_2\text{O}$  (c)  $\text{CO}$  (d)  $\text{NH}_3$

### Section - III (Biology)

27. Which one of the following is not found in a female gametophyte of an angiosperm?  
 (a) Synergids (b) Filiform apparatus  
 (c) Central cell (d) Germ pore
28. The term polyadelphous is related to:  
 (a) Corolla (b) Androecium (c) Gynoecium (d) Calyx
29. Which one from those given below is the period for Mendel's hybridization experiments?  
 (a) 1857 - 1869 (b) 1840 - 1850  
 (c) 1870 - 1877 (d) 1856 - 1863
30. The gene which controls many characters is called:  
 (a) Polygene (b) Multiple gene (c) Pleiotropic gene (d) Codominant gene
31. Out of 64 codons, the number of codons with GGG is:  
 (a) 4 (b) 2 (c) 1 (d) 6
32. Autoradiogram of VNTR probe gives many band of different size. It differ from individual to individual except:  
 (a) Heterozygotic twins (b) Monozygotic twins or identical twins  
 (c) Real brothers (d) Real sisters
33. During anaerobic digestion of organic waste, such as in producing biogas, which one of the following is left undergraded?  
 (a) Hemi - cellulose (b) Cellulose  
 (b) Lignin (d) Lipids
34. Which of these is not an important component of initiation of parturition in humans?  
 (a) Release of prolactin  
 (b) Increase in estrogen and progesterone ratio.  
 (c) Release of oxytocin  
 (d) Synthesis of prostaglandins
35. Inner cell mass (embryo) contain certain cells that contain cells called stem cells which have the potency to:

- (a) Give rise only vital organs  
(b) Give rise reproductive organs  
(c) Give rise all the tissues and organs  
(d) Give rise hearts only
36. The emergency contraceptives used to avoid possible pregnancy due to rape or unprotected intercourse is:
- (a) Combination of oxytocin and estrogen within 72 hours  
(b) Uses of a double dose of normal oral contraceptive pills  
(c) Combination of progestogen and estrogen within 72 hours  
(d) Use of plants within skin
37. Which of the following is correctly matched?
- (a) Insulin - Diabetes insipidus  
(b) Thyroxine - Tetanus  
(c) Parathyroid - Tetany  
(d) Adrenaline - Hepatitis
38. Cancer cells can be easily be destroyed by radiations due to:
- (a) Rapid cell division  
(b) Lack of mutation  
(c) Lack of oxygen  
(d) Fast mutation
39. Biodiversity Act of India was passed by the parliament in the year:
- (a) 2002                      (b) 1996                      (c) 2000                      (d) 1992
40. The three zones of biosphere reserves are
- (a) Protected zone, buffer zone and natural zone  
(b) Natural zone, buffer zone and transition zone.  
(c) Core zone, natural zone and central zone  
(d) Main zone, middle zone and outer zone

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(a)	(a)	(c)	(c)	(a)	(a)	(b)	(b)	(a)	(a)
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
(d)	(b)	(b)	(c)	(b)	(a)	(a)	(b)	(a)	(d)
21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
(c)	(d)	(c)	(b)	(a)	(a)	(d)	(b)	(d)	(c)
31.	32.	33.	34.	35.	36.	37.	38.	39.	40.
(c)	(b)	(c)	(a)	(c)	(c)	(c)	(a)	(a)	(b)