



the metamorphosis starts from here....



Brilliant International Olympiad of SCIENCE

Class-12 B

(Syllabus and Sample Question Paper)

PHYSICS Electrostatics, Current Electricity, Magnetic Effects of Current and Magnetism, Electromagnetic Induction and Alternating Currents, Electromagnetic Waves, Optics, Dual Nature of Matter and Radiation, Atoms and Nuclei, Electronic Devices, Communication Systems **CHEMISTRY** Solid State, Solutions, Electrochemistry, Chemical Kinetic, Surface Chemistry, General Principles and Processes of Isolation of Elements, p, d and f Block Elements, Coordination Compounds, Organic Compounds Containing Halogens (Haloalkanes and Haloarenes), Organic Compounds Containing Oxygen (Alcohols, Phenols and Ethers, Aldehydes, Ketones and Carboxylic Acids), Organic Compounds Containing Nitrogen (Amines, Amides, Cyanides, Isocyanides), Biomolecules, Polymers, Chemistry in Everyday Life **BIOLOGY** Reproduction in Living Organisms, Sexual Reproduction in Flowering Plants, Reproduction in Human, Reproductive Health, Principles of Inheritance and Variation, Molecular Basis of Inheritance, Evolution, Human Health, Disease and role of microbes in Human Welfare, Strategies for Enhancement in Food Production Biotechnology : Principles, Processes and its Applications, Ecology, Ecosystem & Environment Issues

The Actual Question Paper Contains 40 Questions. The Duration of the Test Paper is 60 Minutes

1. Meiosis occurs in?

- | | |
|----------------------|---------------------------|
| (A) Endosperm cells | (B) Intercalary meristems |
| (C) Apical meristems | (D) Spore mother cells |
| (E) None of these | |

2. Production of sperms from spermatids is?

- | | |
|--------------------|---------------------|
| (A) Spermiogenesis | (B) Spermatogenesis |
| (C) Oogenesis | (D) Gametogenesis |
| (E) None of these | |

3. In which condition zygotic cell will form normal human female child.

- | | |
|--------------------|--------------------|
| (A) XX chromosomes | (B) Y Chromosomes |
| (C) X Chromosomes | (D) XY chromosomes |
| (E) None of these | |

4. Which of the following amino acid was not found to be synthesised in millers experiment?

- | | |
|-------------------|-------------------|
| (A) Alanine | (B) Glycine |
| (C) Aspartic acid | (D) Glutamic acid |
| (E) None of these | |

5. Phytoplankton are dominant in?

- (A) Limnetic zone (B) Profundal zone
(C) Littoral zone (D) Benthic zone
(E) None of these
-

6. The animal most useful on difficult terrains is?

- (A) Mule (B) Yak
(C) Camel (D) Elephant
(E) None of these
-

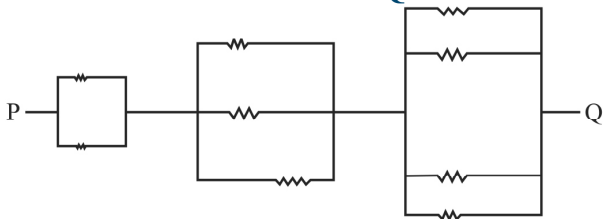
7. Bacteria utilized in gobar gas plant is/are?

- (A) Methanogens (B) Nitrifying
(C) Ammonifying (D) Denitrifying
(E) None of these
-

8. A parallel plate capacitor is made by staking n equally spaced plates connected alternately. If the capacitance between any two adjacent plates is 'C' then the resultant capacitance is ?

- (A) ηc (B) C (C) $(\eta+1)C$ (D) $(\eta-1) C$
(E) None of these
-

9. A number of each 24Ω resistors are connected as shown in the figure. The effective resistance between P and Q is?



- (A) 21.6Ω (B) $\frac{24\Omega}{3}$ (C) 26Ω (D) 36Ω
(E) None of these
-

10. An electron of mass m and charge e is travelling with a speed v along a circular path of radius r at right angles to a uniform magnetic field B . If the speed of the electron is doubled and the magnetic field is halved, the resulting path would have a radius of ?

- (A) $4r$ (B) $2r$ (C) $\frac{r}{4}$ (D) $\frac{r}{2}$
(E) None of these
-

11. The distance between an object and the screen is 100 cm. A lens produces an image on the screen when placed at either of the position 40 cm apart. The power of lens is ?

- (A) 3 dioptre (B) 5 dioptre
(C) 1 dioptre (D) 9 dioptre
(E) None of these

12. Among the following ions which one has the highest paramagnetism?

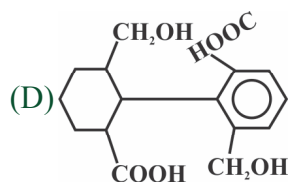
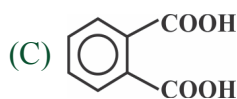
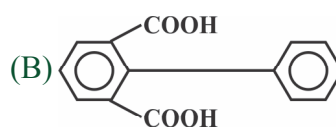
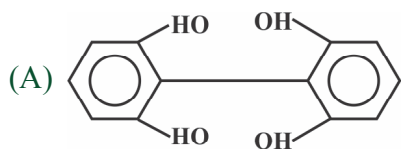
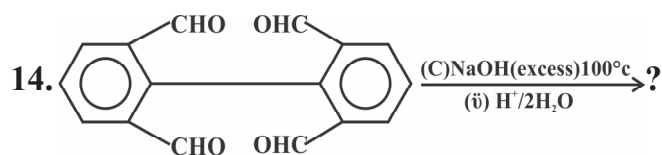
- (A) $[\text{Cr}(\text{H}_2\text{O})_6]^{3+}$
(C) $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$
(E) None of these

- (B) $[\text{Fe}(\text{H}_2\text{O})]^{2+}$
(D) $[\text{Zn}(\text{H}_2\text{O})_6]^{2+}$

13. But-2-one can be converted to propanoic acid by which of the following?

- (A) $\text{NaOH}/\text{NaI}, \text{H}^+$
(C) $\text{NaOH}, \text{I}_2/\text{H}^+$
(E) None of these

- (B) Fehling Solution
(D) Tollen's reagent



- (E) None of these

15. The product of acid catalyzed hydration of 2-phenylpropene is ?

- (A) 3-phenyl-2-propanol
(C) 2-phenyl-2-propanol
(E) None of these

- (B) 1-phenyl-2-propanol
(D) 2-phenyl-1-propanol

ANSWERS

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. D | 2. B | 3. A | 4. D | 5. A |
| 6. A | 7. A | 8. D | 9. C | 10. A |
| 11. B | 12. B | 13. C | 14. D | 15. C |