

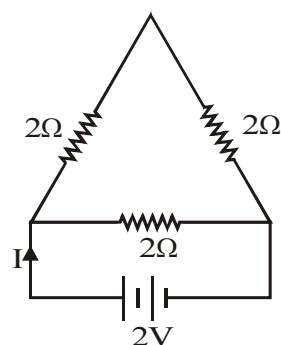
PHYSICS

Q.1 How much work is done in moving a charge of two coulombs from a point at 118 volts to a point at 128 volts?

- (a) 10J
(b) 20J
(c) 5J
(d) None of these

Ans. (a)

Q.2 What is the current in the circuit shown (Fig.) -



- (a) 1.5 A
(b) 0.5 A
(c) 2.5 A
(d) none of these

Ans. (b)

Q.3 A fuse wire should have

- (a) low resistance and low melting point
(b) low resistance and high melting point
(c) high resistance and low melting point.
(d) high resistance and high melting point.

Ans. (a)

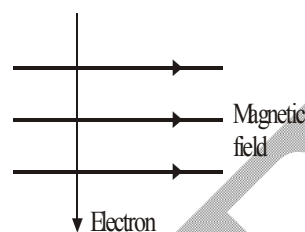
Q.4 In domestic electric circuits, fuse must be placed in series with

- (a) Earth wire
(b) Neutral wire
(c) Live wire
(d) Any of the three wires.

Ans. (a)

Q.5 An electron enters a magnetic field at right angles to it as shown in figure. The direction of force acting on the electron will be

- (a) To the right
(b) To the left
(c) Out of the page
(d) Into the page



Ans. (d)

Q.6 A magnetic compass is placed near a current carrying wire. The deflection of the needle of the magnetic compass increases. It shows that :

- (a) Current in the wire is decreasing
(b) Current in the wire is increasing
(c) Current in the wire has nothing to do with the deflection of the needle of the magnetic compass
(d) Magnetic compass has been disturbed by some one.

Ans. (b)

CHEMISTRY

Q.7 A body moving along a straight line at 20 m/s undergoes an acceleration of 4 m/s^2 . After 2 s its speed will be -

- (a) 8 m/s
(b) 10 m/s
(c) 16 m/s
(d) 28 m/s

Ans. (d)

Q.8 An iron sphere of mass 30 kg has the same diameter as an aluminium sphere whose mass is 10.5 kg. The spheres are dropped simultaneously from a cliff. When they are 10 m from the ground, they have the same

- (a) acceleration
(b) momentum
(c) potential energy
(d) K.E.

Ans. (a)

Q.9 What can be the expected time on the clock of Delhi gate Nahan.

- (a) 12:05:01
(b) 12:05
(c) 12
(d) clock doesn't work

Ans. (b)

Q.10 For hearing an echo the minimum distance should be :

- (a) less than 10 m
(b) between 10 m and 15 m
(c) 17 m or more
(d) none of the above

Ans. (c)

Q.11 The formation of SO_2 and SO_3 explain:

- (a) The law of conservation of mass
(b) The law of multiple proportion
(c) The law of definite properties
(d) Boyle's law

Ans. (b)

Q.12 How many molecules are present in one gram of hydrogen?

- (a) 6.02×10^{23}
(b) 3.01×10^{23}
(c) 2.5×10^{23}
(d) 1.5×10^{23}

Ans. (b)

Q.13 Members of which of the following have similar chemical properties?

- (a) Isotopes
(b) Isobars
(c) Allotropes
(d) Both Isotopes and allotropes

Ans. (c)

Q.14 Which of the following salts has no water of crystallization?

- (a) Blue vitriol
(b) Washing soda
(c) Baking Soda
(d) Gypsum

Ans. (c)

Q.15 The chemical Formula of caustic potash

is-

- (a) $NaOH$
 (b) $Ca(OH)_2$
 (c) NH_4OH
 (d) KOH

Ans. (d)

Q.16 What happen when an acid reacts with metal oxide?

- (a) Salt and water is formed
 (b) Metal hydride is formed
 (c) Oxyacid will be formed
 (d) salt and hydrogen gas is formed

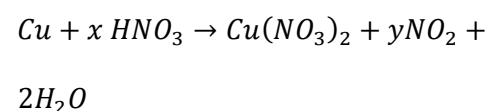
Ans. (a)

Q.17 Chemically rust is-

- (a) Hydrated ferrous oxide
 (b) Only ferric oxide
 (c) Hydrated ferric oxide
 (d) None of these

Ans. (c)

Q.18 The equation -



The value of x and y are -

- (a) 3 and 5
 (b) 8 and 6
 (c) 4 and 2
 (d) 7 and 1

Ans. (c)

Q.19 Heating of ferrous sulphate gives which

of the following product?

- (a) Ferric oxide
 (b) Sulphur dioxide
 (c) Sulphur trioxide
 (d) All of the above

Ans. (d)

Q.20 Although metals form basic oxides, which of the following metals form an Amphoteric oxide?

- (a) Al
 (b) Ca
 (c) Na
 (d) Cu

Ans. (a)

MATHEMATICS

Q.21 A 1.5m tall student walk with his family and observe a banner of CATSE (organised by career Academy Nahan) situated at top of 30m high building at some distance from that building. The angle of elevation from his eyes to the banner of CATSE is 30° and increase to 60° , as he walks towards the building. Then the distance he walks toward the building is

- (a) $20\sqrt{3}$
 (b) $18\sqrt{3}$
 (c) $19\sqrt{3}$
 (d) None

Ans. (c)

Q.22 If two zeroes of

$$x^4 - 16x^3 + 86x^2 - 76x + 105$$

are 1 and 7, then the remaining zeroes of the expression are

- (a) 3,5
 (b) 1,5
 (c) 1,3
 (d) 2,4

Ans:- (a)

Q.23 Two dice are rolled simultaneously. Find the probability of getting the sum of numbers on the two faces divisible by 3 or 4.

- (a) $\frac{4}{9}$
 (b) $\frac{1}{7}$
 (c) $\frac{5}{9}$
 (d) $\frac{7}{12}$

Ans. (c)

Q.24 The area of an equilateral triangle whose two vertices are (1, 0) and (3, 0) and third vertex lying in the first quadrant is :

- (a) $\frac{\sqrt{3}}{4}$
 (b) $\frac{\sqrt{3}}{2}$
 (c) $\sqrt{3}$
 (d) None of these

Ans. (c)

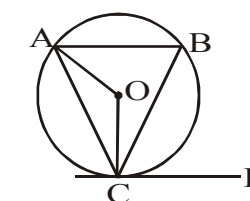
Q.25 A hemispherical basin 150 cm in diameter holds water one hundred and twenty times as much a cylindrical tube. If the height of the tube is 15 cm, then the diameter of the tube (in cm) is:

- (a) 23
 (b) 24
 (c) 25
 (d) 26

Ans. (c)

Q.26 In the given diagram O is the centre of the circle and CD is a tangent. $\angle CAB$ and $\angle ACD$ are supplementary to each other $\angle OAC = 30^\circ$. Find the value of $\angle OCB$:

- (a) 30°
 (b) 20°
 (c) 60°
 (d) None of these



Ans. (a)

Q.27 If $\frac{3+5+7+\dots\text{upto } n \text{ terms}}{5+8+11+\dots\text{upto } 10 \text{ terms}}$ then the value

- of n is :
 (a) 35
 (b) 36
 (c) 37
 (d) 40

Ans. (a)

Q.28 If $\tan A + \cot A = 4$, then $\tan^4 A + \cot^4 A$ is

equal to :

- (a) 110
- (b) 191
- (c) 80
- (d) 194

Ans. (d)

Q.29 If the median of the following data is 40

then the value of p is :

Class	0-10	10-30	30-60	60-80	80-90
Frequency	5	15	30	p	2

- (a) 7
- (b) 8
- (c) 9
- (d) 7.6

Ans. (b)

Q.30 A motor boat takes 12 hours to go downstream and it takes 24 hours to return the same distance. What is the time taken by boat in still water?

- (a) 15 h
- (b) 16 h
- (c) 8 h
- (d) 20 h

Ans. (b)

BIOLOGY

Q.31 A student who is studying in Career Academy Nahan has very good thinking ability. He is able to think by which part of brain?

- (a) Fore brain
- (b) Hind brain
- (c) Mid brain
- (d) Diencephalon.

Ans. (c)

Q.32 Depletion of Ozone molecules in the stratosphere is due to

- (a) Chlorine compounds
- (b) Fluorine compounds
- (c) Halogen compounds
- (d) None of these

Ans. (c)

Q.33 Lipase act on

- (a) Amino acids
- (b) Fats
- (c) Carbohydrates
- (d) All of these

Ans. (a)

Q.34 Incomplete oxidation of glucose into pyruvic acid with several intermediate step is known as

- (a) HMS pathway
- (b) TCA pathway
- (c) Glycolysis

(d) Krebs's Cycle

Ans. (c)

Q.35 In humans, right auricle receives,

_____ blood from _____

- (a) Oxygenated, aorta
- (b) Deoxygenated, vena-cava
- (c) Oxygenated, vana-cava
- (d) Deoxygenated, aorta

Ans. (b)

Q.36 Which vitamin helps in blood clotting?

- (a) Vitamin A2
- (b) Vitamin B
- (c) Vitamin E4
- (d) Vitamin K

Ans. (d)

Q.37 Living cells placed in isotonic solution (0.9% Saline) retain their size and shape.

This is based on the concept of :

- (a) Facilitated diffusion
- (b) Diffusion
- (c) Constant flow
- (d) Osmosis

Ans. (d)

Q.38 _____ is responsible for maintaining biological clock of body

- (a) Pineal
- (b) Kidney
- (c) Thyroid
- (d) Adrenal

Ans. (a)

Q.39 Which of the following statement is true about brain?

(I) The main thinking part of brain is hind brain.

(II) Centres of hearing, smell, memory, sight etc located in fore brain.

(III) Involuntary actions like blood pressure, respiration are controlled by the medulla in the hind brain

(IV) Cerebellum does not control posture and balance of the body

- (a) I and II
- (b) I, II and III
- (c) II and III
- (d) III and IV

Ans. (c)

Q.40 The growth of tendril in pea plants is due to-

- (a) Effect of light
- (b) Effect of gravity
- (c) Rapid cell division in tendrillar cell that are away from the support
- (d) rapid cell division in tendrillar cells in contact with support

Ans. (c)

I.Q

Q.41 In a certain code 'COURT' is written as 5%@38 and TILE is written as 8@\$4. How is CITE written in that code?

- (a) 5\$84
- (b) 5%84
- (c) 5@84
- (d) 3@84

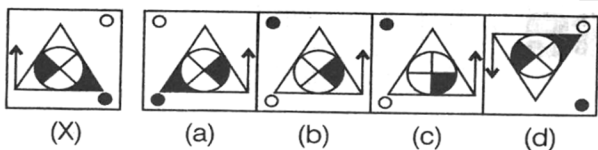
Ans. (c)

Q.42 A cat runs 20 m towards East and turns to right, runs 10 m and again turns to right, runs 9m and again turns to left, runs 5 m and then turns to left, runs 12m and finally, turns to left and runs 6 m. Which direction is the cat facing now?

- (a) East
- (b) West
- (c) North
- (d) South.

Ans. (c)

Q.43 Choose the correct mirror image of the figure (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it.



Ans. (a)

Q.44 Choose the alternative which most closely resembles the mirror image of the given combination

CAREER ACADEMY

- (a) **CAREER ACADEMY**
- (b) **YMEDVCA REEBVC**
- (c) **CAREER ACADEMY**
- (d) **YMEDVCA REEBVC**

Ans. (b)

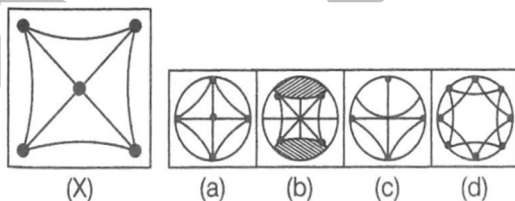
Q.45 Find the missing term in the following series.

ACEGI, JLNPR, SUWYA, ?, KMOQS.

- (a) LBGHI
- (b) ADIFH
- (c) JUVUR
- (d) BDFHJ

Ans. (d)

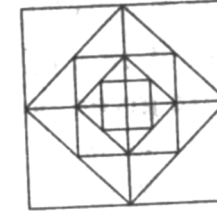
Q.46 You are given a figure (X) followed by four figures (a), (b), (c) and (d) such that (X) is embedded in one of them. Trace out the correct alternative.



Ans. (b)

Q.47 How many squares are there in the figure given below?

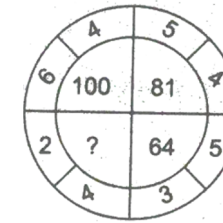
- (a) 12
- (b) 13
- (c) 16
- (d) 19



Ans. (d)

Q.48 Insert the missing letter or numerical value in following questions.

- (a) 64
- (b) 36
- (c) 16
- (d) 72.



Ans. (b)

Q.49 These statements are followed by three conclusions. You have to take the given statements to be true even, if they seem to be at variance from commonly known facts and then decide, which of the given conclusions logically follows from the given statements.

Statements

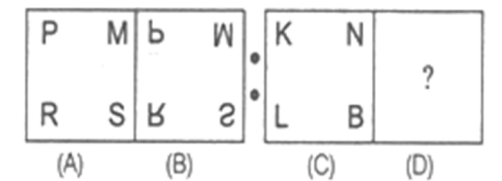
- All petals are flowers.
- All thorns are flowers.
- Some leaves are thorns.
- Some stems are flowers.

Conclusions

- I. Some petals are leaves
 - II. All leaves are flowers.
 - III. Some stems are petals
 - IV. No petal is a leaf.
- (a) None follows
 - (b) Only II follows
 - (c) II and either I or IV follow
 - (d) Either I or IV follows.

Ans. (a)

Q.50 This question consists of two sets of figures. Figures (A), (B), (C) and (D) constitute the problem set while (a), (b), (c) and (d) constitute answer sets. There is a definite relationship between figures (A) and (B), establish a similar relationship between figures (C) and (D) by choosing a suitable figure from answer set.



Ans. (d)