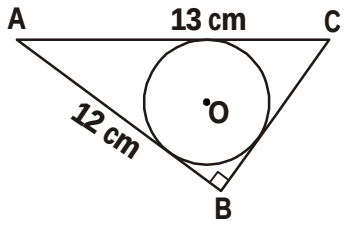
1 **ABC is a right - angled triangle with $\angle B = 90^o$,**

AB = 12 cm and AC = 13 cm. A circle with centre O is inscribed inside the triangle.



Find the radius of the circle.

(A) 8 cm (B) 7 cm

(C) 4 cm (D) 2 cm

2 **If $\sin\theta = -\frac{1}{2}$, what are the respective possible values of θ between 0 and 2π ?**

(A) 210^o and 300^o (B) 240^o and 330^o

(C) 240^o and 300^o (D) 210^o and 330^o

3 **The remainder when a number is divided by 143 is 31. What is the remainder when the same number is divided by 11 ?**

(A) 5 (B) 7 (C) 6 (D) 9

4 **The prime factorization of two numbers are**

$3^2 \times 7^3 \times 11$ and $3 \times 7^2 \times 11^3 \times 17$.

Which of the following is a common factor of the numbers ?

(A) 1683 (B) 5831

(C) 1089 (D) 539

5 **Find the value of 'p' so that $x^2 + 5px + 16 = 0$ has no real root.**

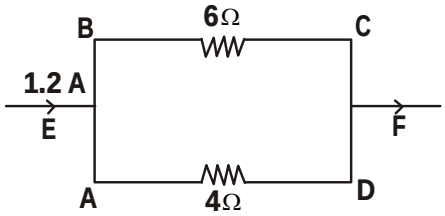
(A) Greater than $\frac{8}{5}$

(B) Less than $\frac{-8}{5}$

(C) Lies between $\frac{-8}{5}$ and $\frac{8}{5}$

(D) Less than $\frac{15}{8}$

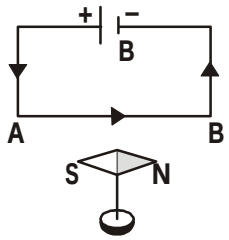
6 **Observe the given circuit.**



Find the current passing through 6 Ω resistor.

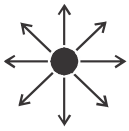
(A) 0.72 A (B) 0.80 A (C) 0.48 A (D) 0.62 A

7 **When a small magnetic needle is placed below a horizontal conductor carrying a strong current from west to east, its north pole will point in the direction of**



(A) west - east. (B) south - west.
(C) north - south. (D) east - west.

8 **Which field pattern given below is valid for both electric and magnetic fields ?**

(A) 

(B) 

(C) 

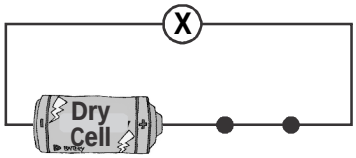
(D) 

9 **Resistance is the ratio of the __X__ in volts across the component to the __Y__ passing through, measured in __Z__.**

Which key has the three words that complete the sentence correctly ?

	X	Y	Z
(A)	Current	Potential difference	Volts
(B)	Potential difference	Current	Amperes
(C)	Potential difference	Power	Watts
(D)	Current	Voltage	Volts

10 **What is the potential difference across bulb X in the circuit shown below ?**



(A) 1.5 V (B) 3.0 V

(C) 4.5 V (D) 6.0 V

11 **Which of the given chemical equations is balanced?**

(A) $H_2O_2 \rightarrow H_2O + O_2$ (B) $NaNO_3 \rightarrow NaNO_2 + O_2$

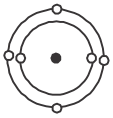
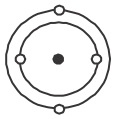
(C) $CaCO_3 \rightarrow CaO + CO_2$ (D) $Al_2CO_3 \rightarrow Al_2O_3 + CO_2$

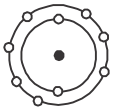
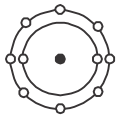
12 **Which set of elements belong to the same period ?**

(A) Li, Na, K (B) Li, Mg, Ca

(C) F, Cl, Br (D) Ga, Ge, As

13 **Which structure represents the electron arrangement of Group 17 element in the periodic table ?**

(A)  (B) 

(C)  (D) 

14 **Identify 'X' and 'Y' in the given chemical reaction.**

$$X + YSO_4 \rightarrow Y + XSO_4$$

(A) Na and Mg (B) Zn and Cu

(C) Ag and K (D) H and Al

15 **Which of the given reactions is a compound –compound combination reaction ?**

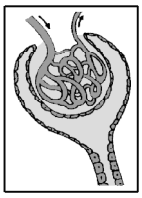
(A) Reaction of water with calcium oxide.

(B) Reaction of iodine with white phosphorus.

(C) Reaction of iron with sulphur.

(D) Electrolysis of water.

16 **Which process occurs in the part shown below ?**

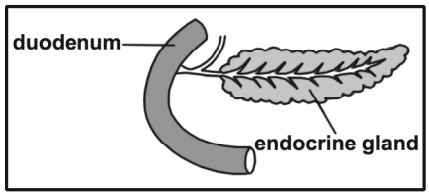


(A) Tubular secretion (B) Tubular reabsorption
(C) Ultrafiltration (D) All of the above

17 **A zygote which develops into a baby girl will have**

(A) 44 + YY chromosomes.
(B) 44 + XX chromosomes.
(C) 44 + XY chromosomes.
(D) 46 Y chromosomes.

18 **What is the immediate effect on a person if the gland shown below is removed ?**



(A) Calcium and phosphorous levels are decreased.
(B) The blood sugar levels in blood are disturbed.
(C) Growth rate decreases.
(D) Growth rate increases.

19 **Which blood group is known as the universal recipient ?**

(A) AB (B) O (C) A (D) B

20 **Which of these activities does not cause pollution ?**

(A) Cars for transportation
(B) Polybags for shopping
(C) Windmills for generating power
(D) Dyes for colouring clothes

Class : X — *General Awareness*

21 **The SI unit for which of these is named after James Watt, a Scottish inventor and engineer ?**

(A) Temperature (B) Power
(C) Force (D) Electric Current

22 **The given logo belongs to which company ?**

(A) Mazda (B) Maruti Suzuki
(C) Toyota (D) Mahindra

23 **Where is the National Institute of Sports located ?**

(A) Ranchi (B) Delhi
(C) Mohali (D) Patiala

24 **Which is the heaviest internal organ in the human body ?**

(A) Pancreas (B) Heart
(C) Liver (D) Lungs

25 **What does the acronym ISD stand for ?**

(A) Internal Subscribers Department
(B) International Subscriber Dialling
(C) International Subscriber Details
(D) Internet Subscriber Details