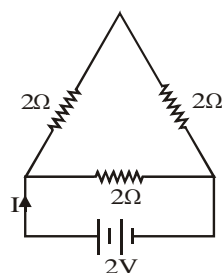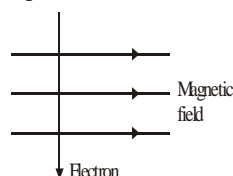# Science

Q.1 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

Q.2 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.

Q.3 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.

Q.4 Which of the following salts has no water of crystallization?
(a) Blue vitriol
(b) Washing soda
(c) Baking Soda
(d) Gypsum

Q.5 The equation –
$Cu + x\,HNO_3 \rightarrow Cu(NO_3)_2 + yNO_2 + 2H_2O$
The value of x and y are –
(a) 3 and 5
(b) 8 and 6
(c) 4 and 2
(d) 7 and 1

Q.6 Although metals form basic oxides, which of the following metals form an Amphoteric oxide?
(a) Al
(b) Ca
(c) Na
(d) Cu

Q.7 Depletion of Ozone molecules in the stratosphere is due to
(a) Chlorine compounds
(b) Fluorine compounds
(c) Halogen compounds
(d) None of these

Q.8 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

Q.9 _____ is responsible for maintaining biological clock of body
(a) Pineal
(b) Kidney
(c) Thyroid
(d) Adernal

Q.10 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

ANSWER KEY:-
1.(A)   2.(D)   3.(A)   4.(C)   5.(C)   6.(A)
7.(C)   8.(D)   9.(A)   10.(C)

SOCIAL sCIENCE

Q.11 What was the theme of the printings of Frederic Sorrieu?
(a) Democracy
(b) Socilaism
(c) Capitalism
(d) None of the above

Q.12 Germany was unified in _____.
(a) 1870
(b) 1871
(c) 1872
(d) 1873

Q.13 Which among the following passed the Rowlatt Act 1919?
(a) Statutory Commission
(b) Imperial Legislative Council
(c) The Government of India
(d) The British Council

Q.14 _____ is the most widely spread and important soil of India.
(a) Black soil
(b) Red Soil
(c) Alluvial Soil
(d) Laterite soil

Q.15 When was Indian Wildlife Protection Act implemented?
(a) 1970
(b) 1972
(c) 1974
(d) 1976

Q.16 Which two languages are generally spoken in Belgium?
(a) French & English
(b) Dutch and English
(c) French and Dutch
(d) Dutch and Sinhala

Q.17 _____ is a coming together federation.
(a) USA
(b) India
(c) Pakistan
(d) Sri Lanka

Q.18 Which one of the following is also called average income?
(a) National Income
(b) Per Capita Income
(c) Total Income
(d) All the mentioned above

Q.19 Which of the following sectors is the largest employes in India?
(a) Primary Sector
(b) Secondary Sector
(c) Tertiary Sector
(d) IT Sector

Q.20 Railway is an example of:
(a) Private Sector
(b) Public Sector
(c) Secondary Sector
(d) None of these

ANSWER KEY:-
11.(A)   12.(B)   13.(B)   14.(C)
15.(B)   16.(C)   17.(A)   18.(B)
19.(A)   20.(B)

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 30^0 and increase to 60^0, 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

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

Q.23 Two dice are rolled simultaneously. 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) $\frac{7}{12}$

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 :
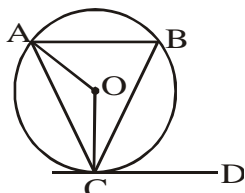(a) $\frac{\sqrt{3}}{4}$
(b) $\frac{\sqrt{3}}{2}$

(c) $\sqrt{3}$
(d) None of these

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

Q.26 In the given diagram O is the centre of the circle and CD is a tangent. ∠CAB and ∠ACD are supplementary to each other ∠OAC = 30°. Find the value of ∠OCB :
(A) 30°
(B) 20°
(C) 60°
(D) None of these

Q.27 If $\frac{3+5+7+\cdots\ldots upto\ n\ terms}{5+8+11+\cdots\ldots upto\ 10\ terms}$ then the value of n is :
(a) 35
(b) 36
(c) 37
(d) 40

Q.28 If tanA + cotA = 4, then $\tan^4 A + \cot^4 A$ is equal to :
(a) 110
(b) 191
(c) 80
(d) 194

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

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

ANSWER KEY:-
21.(C) 22.(A) 23.(C) 24.(C) 25.(C)
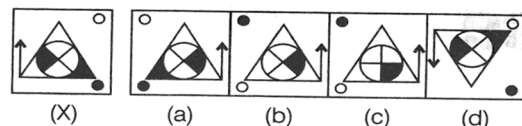26.(A) 27.(A) 28.(D) 29.(B) 30.(B)

Mental ability

Q.31 In a certain code 'COURT' is written as 5%@38 and TILE is written as 8@$4. How is CITE written in that code?
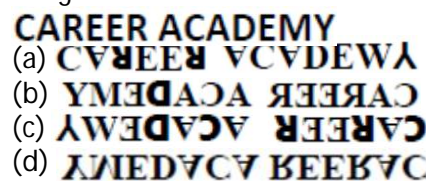(a) 5$84
(b) 5%84
(c) 5@84
(d) 3@84.

Q.32 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.

Q.33 Choose the correct mirror image of the figure (X) from amongst the four alternatives (a), (b), (c) and (d) given along with it.

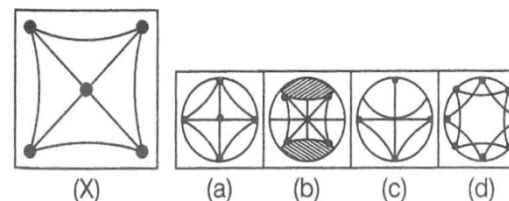Q.34 Choose the alternative which most closely resembles the mirror image of the given combination
CAREER ACADEMY
(a) ＹＭＥＤＡＣＡ ＲＥＥＲＡＣ
(b) ＣＡＲＥＥＲ ＡＣＡＤＥＭＹ
(c) ＣＡＲＥＥＲ ＡＣＡＤＥＭＹ
(d) ＹＭＥＤＡＣＡ ＲＥＥＲＡＣ

Q.35 Find the missing term in the following series.
ACEGI, JLNPR, SUWYA, ? , KMOQS.
(a) LBGHI
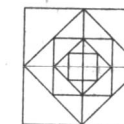(b) ADIFH
(c) JUVUR
(d) BDFHJ

Q.36 You are given a figure (X) followed by four figures (a), (b), (c) and (d) such that

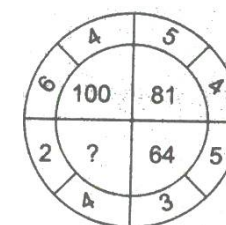(X) is embedded in one of them. Trace out the correct alternative.

(X)   (a)   (b)   (c)   (d)

Q.37 How many squares are there in the figure given below?
(a) 12
(b) 13
(c)16
(d) 19.

Q.38 Insert the missing letter or numerical value in following questions.
(a) 64
(b) 36
(c) 16
(d) 72

Q.39 How many days were there from January 2, 1995 to March 15, 1995?
(a) 73   (b) 74
(c)71   (d) 35

Q.40 Complete the series
17, 25, 41, 65, 97..........
(a) 147   (b) 100
(c) 137   (d) 98

ANSWER KEY:-
31.(C) 32.(C) 33.(A) 34.(A) 35.(D)
36.(B) 37.(D) 38.(B) 39.(A) 40.(C)