SCIENCE

1. Work done in moving a unit positive test charge from infinity to a point inside an electric field, is called
(A) electric potential
(B) field
(C) field intensity
(D) potential difference

2. Electricity from the ocean can be generated based on utilizing
(A) kinetic energy of the waves but not stored thermal energy
(B) stored thermal energy but not kinetic energy of the waves
(C) kinetic energy of the waves as well as stored thermal energy
(D) neither kinetic energy of the waves nor stored thermal energy

3. A positively-charged particle (alpha particle) projected towards west is deflected towards north by a magnetic field. The direction of magnetic field is
(A) Towards south (B) Towards east
(C) Downward (D) Upward.

4. Duralumin is an alloy of–
(A) Cu (B) Zn
(C) Al (D) None of these

5. When HCL gas is prepared on humid day, the gas is usually passed through the guard tube containing $CaCl_2$ - The role of $CaCl_2$ is :-
(A)Absorb evolved gas
(B)Moisten gas
(C)Absorb moisture from gas
(D)Absorb $Cl^-$from evolved gas.

6. Suspension of slaked lime in water in called-
(A) Quick lime (B) Milk of lime
(C) Lime water (D) Washing of lime

7. A muscular sac like structure which stores urine until the pressure inside it leads to the urge to pass the urine out of the body is
(A)Kidney (B)Ureter
(C)Urinary bladder (D)Urethra

8. The number of chromosomes present in human sperm are
(A)22 (B)46
(C)23 (D)44

9. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in
(A) Cytoplasm (B) Mitochondria
(C)Chloroplast (D)Nucleus

10. Given are various parts of respiratory tract
P-Nasal cavity
Q-Pharynx
R-Bronchioles
S-Glottis
T-Bronchus
U –Trachea
V-Alveolus
Which path a molecule of carbon – dioxide present in the alveolus takes on its journey to the outside
(A) $V \rightarrow T \rightarrow R \rightarrow U \rightarrow S \rightarrow Q \rightarrow P$
(B) $V \rightarrow R \rightarrow T \rightarrow S \rightarrow U \rightarrow Q \rightarrow P$
(C) $V \rightarrow R \rightarrow T \rightarrow U \rightarrow S \rightarrow Q \rightarrow P$
(D) $V \rightarrow R \rightarrow T \rightarrow U \rightarrow S \rightarrow P \rightarrow Q$

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

SOCIAL SCIENCE

11. Who was the author of the Book "Hind swaraj"?
(A)Mahatma Gandhi

(B) Jawahar lal Nehru
(C)Subhash Chandra Bose
(D) Rabindranath Tagore

12. Who organized the Dalits into the depressed classes association ?
(A) B.R, Ambedkar
(B) mahatma Gandhi
(C)Netera shastri
(D) Sardar patel

13. Which of the following soil is known as Regur soil ?
(A)Black soil (B)Red soil
(C)Laterite soil (D) Alluvial soil

14. The "chipko movement" was associated with
(A)Women's Rights
(B)Political Rights
(C)Forest conservation
(D)Rights of adivasis

15. Which of these is a coming together federation?
(A)USA (B)India
(C)Pakistan (D) Sri Lanka

16. How many languages are scheduled by our constitution besides Hindi?
(A)21 (B)22
(C)24 (D)20

17. The other name for regional government in India is
(A) Provincial government
(B) State government
(C) Community government
(D) None of these

18. Which of the following is the most important component for comparing different countries ?
(A)Population
(B)Income
(C) Per capita Income
(D)Resources

19. Which State among the following has the lowest literacy rate ?
(A) Punjab (B)Bihar
(C) Kerala (D)Tamil nadu

20. Which of the following is also known as disguised unemployment
(A)Over employment
(B)Under employment
(C)Factory employment
(D)Seasonal employment

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

MATHEMATICS

21. A (5, 1), B(1, 5) and C (–3, –1) are the vertices of ΔABC. The length of its median AD is :
(A) $\sqrt{34}$ (B) $\sqrt{35}$
(C) $\sqrt{37}$ (D) 6

22. If the orthocentre and centroid of a triangle are (– 3, 5) and (3, 3) then it's circumcentre is :
(A) (6, 2) (B) (3, – 1)
(C) (–3, 5) (D) (– 3, 1)

23. The probability of getting a red and a king card from a pack of 52 cards
(A) $\frac{5}{26}$ (B) $\frac{1}{13}$
(C) $\frac{7}{26}$ (D) None of these

24. If the surface areas of two spheres are in the ratio 4 : 9, then the ratio of their volumes is :
(A) 8 : 25 (B) 8 : 26
(C) 8 : 27 (D) 8 : 28

25. If the sum of the first 2n terms of the A.P. 2, 5, 8,... is equal to the sum of the first n terms of the A.P. 57, 59, 61,... then n equals :
(A) 10 (B) 12
(C) 11 (D) 13

26. The HCF of the polynomials $x^4+6x^2+25, x^3-3x^2+7x-5$ and x^2+5-2x is
(A) x^2-2x-5 (B) x^2-2x+5
(C) $x-1$ (D) $3x+2$

27. If p is a positive prime integer, then $\sqrt{p}$ is –
(A) A rational number
(B) An irrational number
(C)A positive integer
(D)None of these

28. Triangle ABC is such that AB=3cm, BC=2cm and CA=2.5cm. Triangle DEF is similar to ΔABC. IF EF= 4cm, then the perimeter of ΔDEF is :
(A)7.5cm (B)15 cm
(C) 22.5 cm (D)30cm

29. If the mean of the frequency distribution is 6, then the value of p is

x	2	4	6	10	p+ 5
f	3	2	3	1	2

(A) 7 (B) 8
(C) 9 (D) 4

30. If $p+q=4$ and $p^2-q^2=1$, then $p-q=$
(A) 4 (B) $\frac{1}{4}$
(C) $-\frac{1}{4}$ (D) None of these

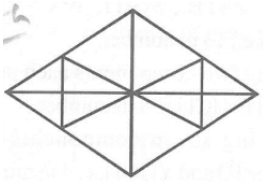
ANSWER-KEY
21.(C) 22.(A) 23.(D) 24.(C) 25.(C)
26.(B) 27.(B) 28.(B) 29.(A) 30.(B)

MENTAL ABILITY

31. A×B means A is the sister of B, A ÷ B means A is the daughter of B, A–B means A is the son of B. On the basis of this information you have to tell, how is P related to S in the relationship P$-Q \times R \div S$
(A) Brother (B) Son
(C) Grandson (D) Daughter's son

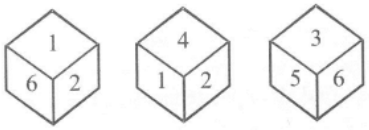
32. If in any code language NATIONAL is written as MZGRLMZO then how is JAIPUR written in that language
(A) QZRKFI (B) PZRKFI
(C) QZRIFK (D) QARKFI

33. How many triangle are there in the following figures?



(A) 16 (B) 22
(C) 28 (D) 32

34. From the following figures of dice, what should be the number opposite 6?



(A) 5 (B) 1
(C) 3 (D) 4

35. Laxman went 15 km to the west from his house, then turned left and walked 20 km. He then turned East and walked 25 km and finally turning left covered 20 km. How far was he from his house?
(A)5 km (B) 10 km
(C) 40 km (D) 80 km

36. In each of the following question, you are given figure(x) followed by four

alternative figures(1), (2), (3) and (4) such that figure (x) is embedded in one of them. Trace out the alternative figure which contains figure (x) as its part .

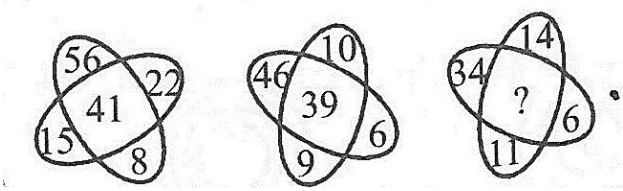
(X) (A) (B) (C) (D)

37. 19, 2, 38, 3, 114, 4.....
(A) 228 (B) 256
(C) 352 (D) 456

38. Fill in the blanks and find the correct answer-
31 _ 4 _ 2 _ 1 = 30
(A) ×,÷,× (B)−, +,÷
(C) +, −,× (D) −, +, +

39. Find the mirror image
MALAYALAM
(A) MALAYALAM (B) MALAYALAM
(C) MALAYALAM (D) MALAYALAM

40. Numbers are placed in figures on the basis of some rules. One place in the figure is indicated by the interrogation sign(?). find out the correct alternative to replace the question mark and indicate your answer by filling the circle of the corresponding letter



(A)12 (B)25
(C) 48 (D)52

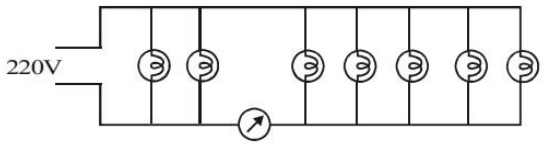
ANSWER-KEY
31.(D) 32.(A) 33.(C) 34.(D) 35.(B)
36.(D) 37.(D) 38.(D) 39.(B) 40.(B)

SCIENCE

1. Which of the following is a renewable source of energy?
(A) Coal (B) Natural gas
(C) Wood (D) Petroleum

2. A charged particle having charge1.6 × 10^{-19}C travels with a speed of 3.2 × 10 $^{6}ms^{-1}$ in a direction parallel to the direction of magnetic field 0.04 T. The force experienced by the particle is :
(A) 2.0 × 10^{-14} N
(B) 0.2 × 10^{-14} N
(C) Zero
(D) 4.0 × 10^{-14} N

3. Seven identical lamps of resistance 2200 Ω each are connected to a 220 V line as shown in Fig. Then the reading in the ammeter will be :-



(A)$\frac{1}{10}A$ (B) $\frac{2}{5}A$
(C) $\frac{3}{10}A$ (D)$\frac{1}{2}A$

4. Which of the following reaction is metathesis reaction?

(A)$FeCL_3 + 3NaOH \rightarrow Fe(OH)_3 + 3NaCL$
(B)Zn+ $H_2SO_4 \rightarrow ZnSO_4 + H_2$
(C)2CO+$O_2 \rightarrow 2CO_2$
(D)$N_2 + O_2 \rightarrow 2NO$

5. $CuSO_4.5H_2O$. In this compound, water molecule is called
(A) Pure water
(B) Water of crystallization
(C) Soda water
(D) None

6.

Column - I	**Column – II**
(A) MnO_2	(P) Cinnabar
(B) HgS	(Q) Copper Glance
(C) Ag_2S	(R) Pyrolusite
(D) Cu_2S	(S) Argentite

Option

	A	**B**	**C**	**D**
(A)	R	P	S	Q
(B)	P	Q	R	S
(C)	S	R	P	Q
(D)	Q	P	S	R

7. Who is known as Father of genetics:
(A)G.J. Mendel
(B)Robert Hooke
(C)Aristotle
(D)Theopharastus

8. Which vessel takes the oxygen rich blood towards the heart from lungs?
(A)Vein
(B)Pulmonary artery
(C)Arteries
(D)Pulmonary vein

9. Kamika met with an accident and lost her vision. She is now pregnant and worried that her baby would inherit blindness from her.On consulting a doctor,she asks some questions and doctor explained her.Which of the following will be correct explanation of her questions:
(i)that blindness (in this case) is a kind of inherited trait.
(ii)that blindness (in this case) is a kind of an acquired trait.
(iii) Acquired traits do not pass from one generation to the other
(iv)Inherited traits do not pass from one generation to the other.
(v)So,the baby will not be born blind
(A)i,iv and v (B)i,iii and v
(C)ii,iii and v (D)ii,iv and v

10. Fossil X is older than fossil Y because:
(A) Fossil X was found in the deeper sediments.
(B) Fossil Y was found in deeper sediment.
(C)Fossil X was homologous organs of Y.
(D)Fossil Y has some homologous organs with X.

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

SOCIAL SCIENCE

11. Which of the following sectors is the largest employes in India
(A) Primary sector
(B)Secondary sector
(C)Tertiary sector
(D)It sector

12. Literacy rate measures the proportion of literate population in the _____and above age group.
(A)Five (B)Six
(C)Seven (D)Eight

13. In which year was the Vienna congress held ?
(A)1815 (B)1845
(C)1885 (D)1915

14. Who Played the key role in unfying Germany?
(A)friedrich Wilhelm
(B)otto von Bismarck
(C)metternich
(D)kaisar William-I

15. Which one of the following is not a renewable resources ?
(A)Solar energy (B)Wind energy
(C)Forests (D)Fossil fuels

16. Which soil is ideal for growing cotton ?
(A)Red soil (B)Black Soil
(C)Allurial Soil (D)None of these

17. Which major social group constituted the largest share in population of sri lanka
(A) Sinhalas
(B) Sri Lankan Tamils
(C)Indian Tamils
(D)Muslims

18. Which of the following is not a subject of the union list
(A)Foreign affairs (B)Banking
(C)Currency (D)Law and order

19. Which type of state is India ?
(A) Democratic (B)Secular
(C) Welfare (D)All of these

20. The motive of private sector enterprises is
(A)Profit making
(B)Entertainment
(C)Social welfare and security
(D)None of these

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

MATHEMATICS

21. The vertices of a parallelogram are $(3,-2)$, $(4,0)$, $(6,-3)$ and $(5,-5)$. The diagonals intersect at the point M. The coordinates of the point M are :
(A) $\left(\frac{9}{2},-\frac{5}{2}\right)$
(B) $\left(\frac{7}{2},-\frac{5}{2}\right)$
(C) $\left(\frac{7}{2},-\frac{3}{2}\right)$
(D) None of these

22. A coin is tossed successively three times. Find the probability of getting exactly one head or two heads.

(A)$\frac{1}{4}$ (B) $\frac{3}{4}$

(C) $\frac{1}{2}$ (d) $\frac{3}{8}$

23. If a cube of maximum possible volume is cut off from a solid sphere of diameter d, then the volume of the remaining (waste) material of the sphere would be equal to :

(A) $\frac{d^3}{3}\left(\pi - \frac{d}{2}\right)$ (B) $\frac{d^3}{3}\left(\frac{\pi}{2} - \frac{1}{\sqrt{3}}\right)$

(c) $\frac{d^2}{4}\left(\sqrt{2} - \pi\right)$ (D)None of these

24. If the radius and height of a cylinder are in the ratio 5 : 7 and its volume is 550 cm^3, then its radius is equal to (Take π=$\frac{22}{7}$)

(A) 6 cm (B) 7 cm

(C) 5 cm (D) 10 cm

25. If 7^{th} and 13^{th} terms of an A.P. be 34 and 64, respectively, then it's 18^{th} term is :

(A) 87 (B) 88

(C) 89 (D) 90

26. Minimum value for the polynomial $4x^2 - 6x + 1$ is:

(A) $\frac{-3}{4}$ (B) $\frac{-5}{4}$

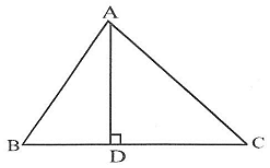
(C) $\frac{-5}{16}$ (d)$-\infty$

27. Write the following surds in ascending order $\sqrt[3]{11}, \sqrt[4]{7}, \sqrt{5}$

(A)$\sqrt{5}, \sqrt[4]{7}, \sqrt[3]{11}$ (B)$\sqrt[4]{7}, \sqrt{5}, \sqrt[3]{11}$

(C)$\sqrt[4]{17}, \sqrt[3]{11}, \sqrt{5}$ (D) $\sqrt{5}, \sqrt[3]{11}, \sqrt[4]{7}$

28. In a right angled ΔABC, right angled at A, if AD $\perp$ BC such that $AD = p$, If $BC = a$, CA=b and $AB = c$, then :



(A)$p^2 = b^2 + c^2$ (B) $\frac{1}{p^2} = \frac{1}{b^2} + \frac{1}{c^2}$

(C) $\frac{p}{a} = \frac{p}{b}$ (D)$p^2 = b^2c^2$

29. The average value of the median of 2, 8, 3, 7, 4, 6, 7 and the mode of 2, 9, 3, 4, 9, 6, 9 is

(A) 9 (B) 8

(C) 7.5 (D) 6

30. The sum of the digits of a two digit number is 14. If 18 is subtracted form the number, digits are reversed. Find the number

(A) 86 (B) 77

(C) 68 (D) 76

ANSWER-KEY

21.(A) 22.(B) 23.(B) 24.(C) 25.(C)
26.(B) 27.(C) 28.(B) 29.(C) 30.(A)

MENTAL ABILITY

31. Pointing to the lady on the platform, manju said “she is the sister of the father of my mother’s son” who is the lady to manju?

(A) mother (B) sister

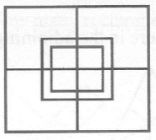
(C) aunt (D) niece

32. If RAT =42 and CAT=57, then LATE=?

(A) 60 (B) 70

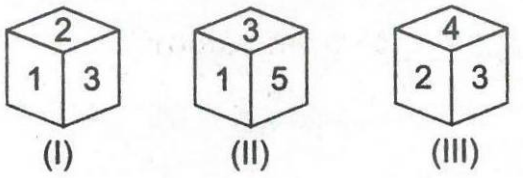
(C) 64 (D) 74

33. How many squares are there in the following figure?



(A)13 (B) 14
(C)16 (D) 15

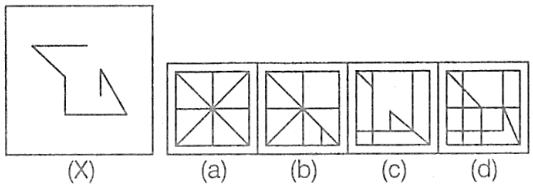
34. Which number is opposite to face 3?



(a) 1 (b) 6
(c)5 (d) 4

35. A man is facing west. He turns 45° in the clockwise direction and then another 180° in the same direction and then 270° in the anti-clockwise direction. Which direction is he facing now?
(A) South (B) North-west
(C) West (D) South-west

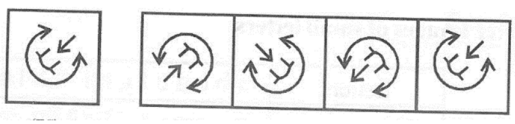
36. In each of the following question, you are given figure(x) followed by one of them. Trace out the alternative figure which contains figure (x) as its part .



37. 4, 9, 17, 35,.....,139
(A) 89 (B) 79
(C) 69 (D) 59

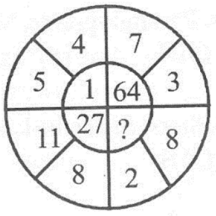
38. If 3 + 9 = 31 ; 15 + 12 = 45; 18 + 9 = 36 then 12+27=?
(A) 49 (B) 14
(C) 94 (D) 72

39. Choose the correct mirror image



(x) (A) (B) (C) (D)

40.



(A) 0 (B) 8
(C) 125 (D) 216

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