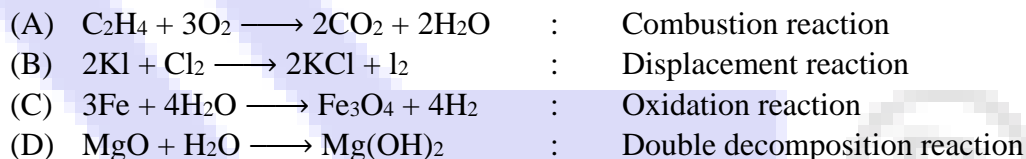


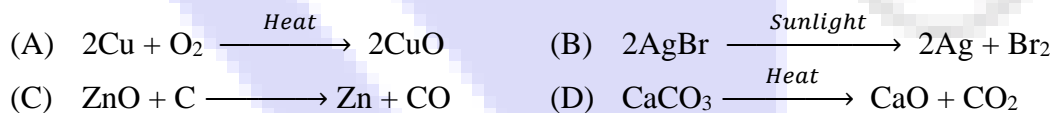
Super Scholar 2018 Class X Sample Questions

SECTION A – Science

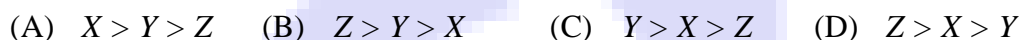
1. Given below are few reactions which are matched with their type. Mark the reaction which is not correctly matched.



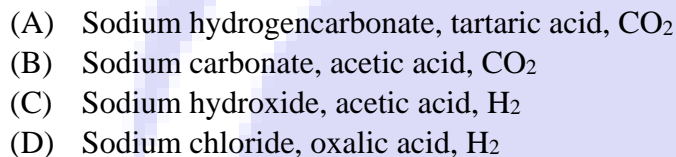
2. Which of the following reactions are involved in black and white photography ?



3. The pH of three solutions X, Y and Z is 6, 4 and 8 respectively. Which of the following is the correct order of acidic strength ?



4. Fill in the blanks by choosing the correct option. Baking powder is a mixture of _____ and a mild edible acid such as _____. When it is heated, _____ is produced which makes bread and cake soft and spongy.



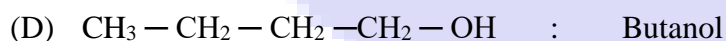
5. Ratio of water molecule in Y : X is



6. Kishore took four test tubes containing solutions of zinc sulphate, aluminium sulphate, copper sulphate and iron sulphate. He put one iron nail in each test tube and observed that only in one test tube the nail gets a reddish brown coating. In which solution the brown coating was observed ?



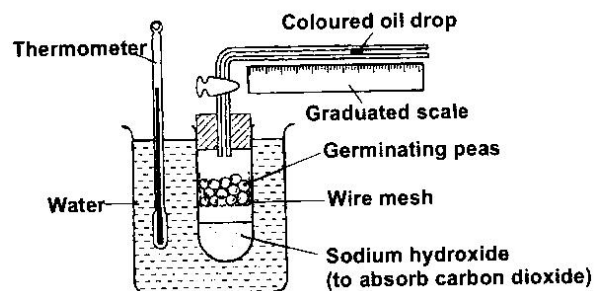
7. A yellow coloured brittle element on burning produces a gas. The solution of this gas in water turns blue litmus red. The oxide is generally responsible for acid rain and for spoiling the buildings made of marble. The element and the oxide are
 (A) Fe, Fe₂O₃ (B) Si, SiO₂ (C) S, SO₂ (D) Ca, CaO
8. Ethane is produced when
 (A) Ethanol reacts with ethanoic acid in presence of few drops of conc. H₂SO₄
 (B) Ethanol is oxidized with acidified potassium dichromate
 (C) Ethanol is heated with excess of conc. H₂SO₄ at 443 K
 (D) Ethanol reacts with sodium metal.
9. Mark the wrong statement among the following.
 (A) People sleeping in closed room with coal fire burning inside have died due to CO₂ poisoning.
 (B) Flame is only produced when gaseous substances burn.
 (C) Fullerenes are allotropes of carbon.
 (D) Intake of methyl alcohol can cause death.
10. Garima wrote IUPAC names of few compounds asked by her science teacher. The teacher told her that one of the compounds was not correctly named. Identify the one with wrong name.



11. Fill in the blanks by marking the option with correct words.

Elements which lie in the same _____ have similar _____ and same number of _____ and the elements are arranged in the increasing order of number of _____ .

- (A) Period, Valence electrons, Shells, Electrons
 (B) Group, Electronic configuration, Valence electrons, Shells
 (C) Group, Shells, electrons, Valence electrons
 (D) Period, Properties, Electrons, Shells



12. The ionization energies of elements U , V , W and X are 2480, 550, 950 and 1690 kJ mol^{-1} respectively. Which of the statements about these elements are correct ?

- (i) V is a reactive metal. (ii) X is a reactive non-metal
 (iii) U is a noble gas.

- (A) (i) and (ii) (B) (ii) and (iii) (C) (i), (ii) and (iii) (D) (i) and (iii)

13. Study the given experimental set-up.

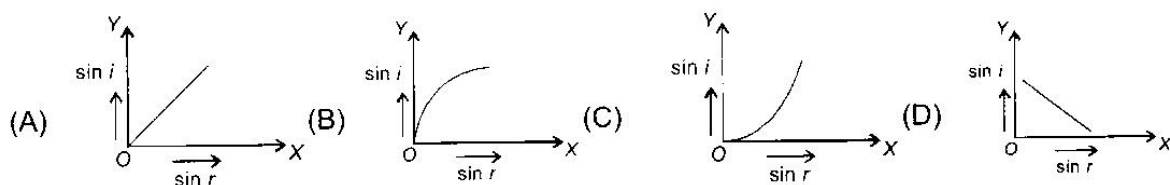
By measuring the movement of the oil drop in the apparatus, what can be investigated ?

- (A) Carbon dioxide released during germination
 (B) Heat released during germination
 (C) Oxygen used during germination
 (D) Water produced during germination

14. It is a unicellular organism, which develops protective wall during unfavourable conditions and on getting favourable conditions splits to form many new organisms at the same time. Identify the organism.

- (A) *Paramecium* (B) *Plasmodium*
 (C) *Trypanosoma* (D) *Leishmania*

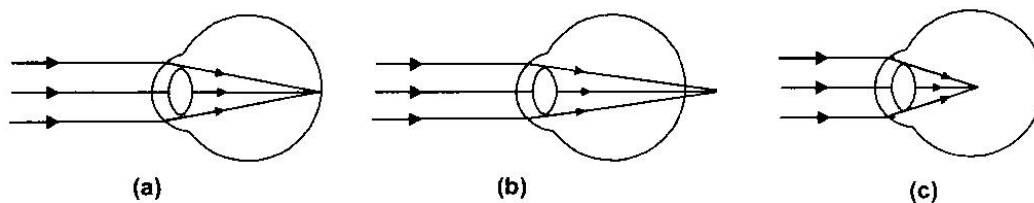
15. Genetic drift is defined as
- (A) A random change in gene frequencies from one generation to the next
 - (B) A change in an allele due to alteration in the DNA molecule
 - (C) A change in gene frequencies due to exchange of genes between different populations
 - (D) A product of natural selection.
16. Farmers have produced (or evolved) entirely different looking vegetables from wild cabbage. Below are given some evolved types along with their characteristics. Select the incorrect match among them.
- (A) Sterile flowers – Cauliflower
 - (B) Swollen parts – Kohlrabi
 - (C) Arrested flower development – Broccoli
 - (D) Non-edible stem – Kohlrabi
17. The genotype for the height of an organism is written as Tt. What conclusion may be drawn ?
- (A) The allele for height has at least two different genes.
 - (B) There are at least two different alleles for the gene for height.
 - (C) There are two different genes for height, each having a single allele.
 - (D) There is one allele for height with two different forms.
18. Which of the following correctly represents graphical relation between sine of angle of incidence (i) and sine of angle of refraction (r) ?



19. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
(a) Power of convex lens	(i) Positive power
(b) Power of concave lens	(ii) Negative power
(c) Power of plane mirror	(iii) Infinite power
(A) (a)-(i), (b)-(iii), (c)-(ii)	(B) (a)-(i), (b)-(ii), (c)-(iii)
(C) (a)-(ii), (b)-(i), (c)-(iii)	(D) (a)-(iii), (b)-(ii), (c)-(i)

20. Figures (a), (b) and (c) respectively, indicate the point of focus in case of



- (A) The normal eye, the hypermetropic eye and myopic eye
 (B) The hypermetropic eye, the myopic eye and the normal eye
 (C) The normal eye, the myopic eye and the hypermetropic eye
 (D) The myopic eye, the normal eye and the hypermetropic eye.
21. What is true about the condition of myopia ?
- (A) The image focuses after it reaches the retina.
 (B) The lens of the eye is too thin.
 (C) The distance of retina from lens is longer than normal eye
 (D) None of these.
22. Two electric bulbs, one of 200 volt 40 watt and the other 200 volt 100 watt are connected in a house wiring circuit
- (A) They have equal current flowing through them
 (B) The resistance of the filaments in both the bulbs is same
 (C) The resistance of the filament in 40 watt bulb is more than the resistance in 100 watt bulb
 (D) The resistance of the filament in 100 watt bulb is more than the resistance of 40 watt bulb.
23. Read the given statements and mark the correct option.
 Statement 1 : A current carrying conductor experiences a force in a magnetic field.
 Statement 2 : Net charge on a current carrying conductor is zero.
- (A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
 (B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
 (C) Statement 1 is true, but statement 2 is false.
 (D) Statement 1 is false, but statement 2 is true.

24. Read the given statements and mark the correct option.

Statement 1 : The solar cells are used to convert solar energy into electrical energy.

Statement 2 : The solar cells are made from semiconductor elements.

(A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.

(B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

(C) Statement 1 is true but statement 2 is false.

(D) Statement 1 is false but statement 2 is true.

25. Chipko movement was the tree hugging movement in which the villagers compelled the axeman to stop tree felling by embracing and encircling trees. Which of the following person was not related with this movement ?

(A) Rajendra Singh

(B) Gaura Devi

(C) Sunderlal Bahuguna

(D) Chandi Prasad Bhatt

SECTION B – Mathematics

26. The real number $r = \frac{2^2 \times 3^2 \times 7^2}{2^5 \times 3^3 \times 3^2 \times 7}$ will have _____ .

(A) Terminating decimal.

(B) Non-terminating decimal.

(C) Non-terminating and non-repeating decimal. (D) Terminating repeating decimal.

27. $\frac{2\sqrt{6}}{\sqrt{2} + \sqrt{3} + \sqrt{5}}$ is equal to _____ .

(A) $\sqrt{2} + \sqrt{3} - \sqrt{5}$

(B) $4 - \sqrt{2} - \sqrt{3}$

(C) $\sqrt{2} + \sqrt{3} + \sqrt{6} - 5$

(D) $\frac{1}{2}(\sqrt{2} + \sqrt{5} - \sqrt{3})$

28. If the sum of the squares of zeroes of the quadratic polynomial $f(x) = x^2 - 5x + k$ is $\frac{-11}{25}$, find the value of k .

(A) 3

(B) 4

(C) 2

(D) -2

29. Quadratic polynomial having sum of its zeroes 5 and product of its zeroes -14 is _____ .

(A) $x^2 - 5x - 14$

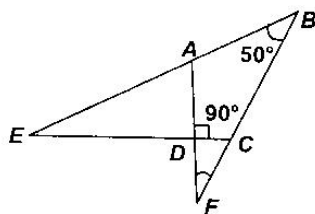
(B) $x^2 - 10x - 14$

(C) $x^2 - 5x + 14$

(D) $x^2 - 10x + 14$

30. Places P_1 and P_2 are 250 km apart from each other on a national highway. A car starts from P_1 and another from P_2 at the same time. If they go in the same direction then they meet in 5 hours and if they go in opposite directions they meet in $\frac{25}{13}$ hours. The speed of the cars are _____ .
- (A) 90 km/hr, 40 km/hr (B) 40 km/hr, 80 km/hr
 (C) 20 km/hr, 60 km/hr (D) 50 km/hr, 12 km/hr
31. The sum of a two digit number and the number obtained by interchanging the digits of the number is 121. If the digits of the number differ by 5, then numbers are _____ .
- (A) 62, 26 (B) 38, 83 (C) 42, 24 (D) 37, 73
32. If $ax^2 + bx + c = 0$ has equal roots, then c is equal to _____ .
- (A) $\frac{-b}{2a}$ (B) $\frac{b}{2a}$ (C) $\frac{-b^2}{4a}$ (D) $\frac{b^2}{4a}$
33. Two numbers whose sum is 6 and the absolute value of whose difference is 8 are the roots of the equation _____
- (A) $a^2 - 6a + 7 = 0$ (B) $a^2 - 6a - 7 = 0$
 (C) $a^2 + 6a - 8 = 0$ (D) $a^2 - 6a + 8 = 0$
34. Product of the fourth term and the fifth term of an arithmetic progression is 594. Division of the ninth term by the fourth term of the progression gives quotient as 2 and the remainder as 3. Find the first term of the progression.
- (A) 4 (B) 6 (C) 8 (D) 9
35. Four numbers are inserted between the numbers 4 and 39 such that an A. P. results. Find the biggest of these four numbers.
- (A) 33 (B) 31 (C) 32 (D) 30
36. Four vertices of a parallelogram taken in order are $(-3, -1)$, (a, b) , $(3, 3)$ and $(4, 3)$. What will be the ratio of a and b ?
- (A) 4 : 1 (B) 1 : 2 (C) 1 : 3 (D) 3 : 1
37. The coordinates of the centre of a circle passing through $(1, 2)$, $(3, -4)$ and $(5, -6)$ is _____ .
- (A) (2, 11) (B) 11, 2) (C) (11, -2) (D) (-2, 11)

38. In
to



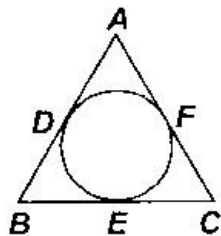
the adjacent figure, BA and BC are produced
meet CD and AD produced in E and F .
Then $\angle AED + \angle CFD$ is _____

- (A) 80° (B) 50°
(C) 40° (D) 160°

39. A circle inscribed in $\triangle ABC$ having $AB = 10$ cm, $BC = 12$ cm, $CA = 28$ cm touching sides
at

D, E, F .

Then $AD + BE + CF$ is _____ .



- (A) 25 cm (B) 20 cm
(C) 22 cm (D) 18 cm

40. The inner circumference of a circular track is 24π m. The track is 2m wide from
everywhere. The quantity of wire required to surround the path completely is _____ .

- (A) 80 m (B) 81 m (C) 82 m (D) 88 m

41. A man runs around a circle of radius 50 m at a speed of 12 km/h. The time taken by him
for going around it ten times is _____ .

- (A) 10 mins 42 secs (B) 12 mins 35 secs
(C) 15 mins 42 secs (D) 10 mins 35 secs

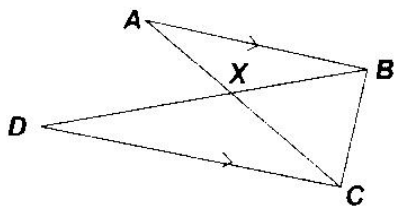
42. The average age of 5 teachers is 28 years. If one teacher is excluded the mean gets
reduced by 2 years. The age of the excluded teacher is _____ .

- (A) 26 years (B) 33 years (C) 36 years (D) 35 years

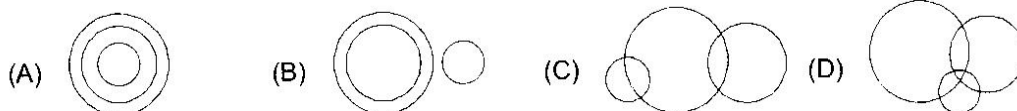
43. Three letters, to each of which corresponds an addressed envelope are placed in the envelopes at random at random. The probability that all letters are placed in the right envelopes is _____ .
- (A) $\frac{1}{3}$ (B) 1 (C) $\frac{1}{6}$ (D) 0
44. The angle of elevation of a cloud from a point 60 m above a lake is 30° and the angle of depression of its image in lake is 60° . The height of the cloud is _____ .
- (A) 100m (B) 80m (C) 40m (D) 120m
45. While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 7%, he earns Rs.15 less as profit. The marked price of the watch is _____ .
- (A) Rs. 697.50 (B) Rs.712.50 (C) Rs. 787.50 (D) Rs. 750

SECTION C- LOGICAL APTITUDE

46. In a polygon there are 6 right angles and the remaining angles are all equal to 200° each. The number of sides of the polygon is _____
- (A) 15 (B) 12 (C) 9 (D) 23
47. If $x^3 - 6x^2 + ax + b$ is exactly divisible by $x^2 - 3x + 2$, then values of a and b are _____
- (A) $a=11, b=-5$ (B) $a=-11, b=-5$
 (C) $a=11, b=-6$ (D) $a=11, b=6$
48. A takes 6 days less than the time taken by B to finish a piece of work. If both A and B together can finish it in 4 days, find the time taken by B to finish the work.
- (A) 12 days (B) 24 days (C) 6 days (D) 18 days
49. If $3 \cos \theta = 5 \sin \theta$, then the value of $\frac{5 \sin \theta - 2 \sec^3 \theta + 2 \cos \theta}{5 \sin \theta + 2 \sec^3 \theta - 2 \cos \theta}$ is _____ .
- (A) $\frac{271}{979}$ (B) $\frac{316}{2937}$ (C) $\frac{542}{2937}$ (D) None of these
50. The ratio between the radius of the base and the height of the cylinder is 2 : 3. If its volume is 1617 cm^3 , the total surface area of the cylinder is _____ .
- (A) 308 cm^2 (B) 462 cm^2 (C) 540 cm^2 (D) 770 cm^2



51. Which of the following Venn diagram correctly represents “Seconds, Minutes and Hours”?.?



52. In the given diagram, AB is parallel to DC . AC and BD intersect at X . If $AB = 8$ cm, $AX = 4$ cm and $BD = 14$ cm. Find BX .

- (A) 4.5 cm (B) 5.6 cm
(C) 8.5 cm (D) 12 cm

53. The difference between an exterior angle of $(n-1)$ sided regular polygon and an exterior angle of $(n+2)$ sided regular polygon is 6° , then the value of n is _____ .
(A) 14 (B) 15 (C) 13 (D) 12

54. The door of Aditya’s house faces East. From the back side of his house , he walks straight 50 meters , then turns to the right and walks 50 meters again. Finally , he turns towards left and stops after walking 25 meters . Now , Aditya is in which direction from the starting point?
(A) South to east (B) North - east (C) West (D) North - west

55. Q’s mother is sister of P and daughter of M. S is daughter of P and sister of T. How is M related to T ?
(A) Aunt
(B) Father
(C) Sister
(D) Maternal Grandfather or Maternal Grandmother

56. Forty boys are standing in a row facing the North. Arun is eleventh from the left and Deepak is thirty-first from the right end of the row. How far will Shiva , who is third to the right of Arun in the row , be from Deepak ?
(A) 2nd (B) 3rd (C) 4th (D) 5th

57. Choose the correct option that will continue the same pattern and replace the question mark in the given series.

3, 12, 27, 48, 75, 108, ?

- (A) 147 (B) 162 (C) 183 (D) 192

58. Find out how many such pairs of letters are there in the given word each of which has many letters between them in the word as in the English alphabet ?

ADVERTISEMENT

- (A) Three (B) Four (C) Five (D) More than five

59. One fourth of a herd of cows is in the forest. Twice the square root of the herd has gone to mountains and remaining 15 are on the banks of a river. The total number of cows is _____.

- (A) 6 (B) 100 (C) 63 (D) 36

60. A man pointing to a photograph says, "The lady in the photograph is my nephew's maternal grandmother". How is the lady in the photograph related to the man's sister who has no other sister ?

- (A) Cousin (B) Sister-in law (C) Mother (D) Mother-in law