SAMPLE PAPER–1

ACADEMIC SESSION : 2019-20

FOR CLASS X MOVING STUDENT

Time : 1½ Hr. **Negative Marking - 0.25** **Maximum Marks : 60**

GENERAL INSTRUCTIONS

1. Each question carry 1 marks.
2. Blank papers, clip boards, log tables, slide rule, calculators, mobile or any other electronic gadgets in any form is not allowed.
3. Write your Name and Roll No. in the space provided in the bottom of this booklet.
4. Before answering the paper, fill up the required details in the blank space provided in the answer sheet.
5. Do not forget to mention your roll number neatly and clearly in the blank space provided in the answer sheet.
6. No rough sheets will be provided by the invigilators. All the rough work is to be done in the blank space provided in the question paper.
7. In case of any dispute, the answer filled in the OMR sheet available with the institute shall be final.
8. Post exam Answer Key will be declared. Correction in Answer Key will be accepted till next 36 hours after which no correction will be entairtained.

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1. If the mean of the numbers 7, 3, 8, 4, x, 7, 9, 7 and 12 is 7, then the difference between the median and the mode of the numbers 12, 10, 8, 10, x, 7, 6, 8 and 6 is :

(A) 0 (B) 1

(C) 2 (C) 3

2. The radius of sphere is 3r, then its volume will be :

(A) $\frac{16}{3}\pi r^3$ (B) $\frac{32}{3}\pi r^3$

(C) $\frac{108}{3}\pi r^3$ (D) $36\pi r^3$

3. If $x = \sqrt{2+\sqrt{2}}$, then $x^4 + \frac{4}{x^4}$ is :

(A) 8 (B) $6\sqrt{2} - 2$

(C) $6 - \sqrt{2}$ (D) 12

4. The average age of group of eight members is the same as it was 3 years ago, when a young member is substituted for an old member. The incoming member is younger to the outgoing member by :

(A) 11 years (B) 24 years

(C) 28 years (D) 16 years

5. One of the factors of the expression $(2a + 5b)^3 + (2a - 5b)^3$ would be –

(A) 4a (B) 10b

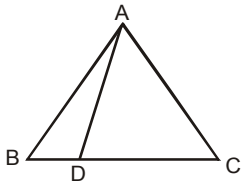
(C) 2a + 5b (D) 2a – 5b

6. In a ΔPQR, PS is bisector of $\angle P$ meet QR at S and $\angle Q = 70^\circ$, $\angle R = 30^\circ$, then :

(A) QS > PQ > PR (B) QS < PQ < PR

(C) PQ > QS > SR (D) PQ < QS < SR

7. In the adjoining figure, the point D divides the side BC of ΔABC in the ratio m : n, then the ar (ΔABD) : ar(ΔADC) are in the ratio :



(A) n : m (B) m : n

(C) $n^2 : m^2$ (D) $m^2 : n^2$

8. Find the value of $56.08\overline{148} \div 14$.

(A) $4\frac{407}{5863}$ (B) $4\frac{407}{69930}$

(C) $4\frac{407}{6993}$ (D) None of these

9. If $\frac{\left(a+\frac{1}{b}\right)^p \times \left(a-\frac{1}{b}\right)^q}{\left(b+\frac{1}{a}\right)^p \times \left(b-\frac{1}{a}\right)^q} = \left(\frac{a}{b}\right)^x$ then what is x ?

(A) p + q (B) p – q

(C) pq (D) $\frac{p}{q}$

10. D is a real number with non terminating digits a_1 and a_2 after the decimal point. Let $D = 0.a_1a_2a_1a_2.....$ with a_1 & a_2 both not zero which of the following when multiplied by D will necessarily give an integer ?

(A) 198 (B) 18

(C) 125 (D) 75

Space For Rough Work

11. If initially the distance between two bodies is r and their masses be M_1 and M_2 then the force of gravitation be F. If this distance is increased to two times then the force would become :

(A) $\frac{F}{2}$ (B) $\frac{F}{4}$

(C) 2 F (D) 4 F

12. A cylinder of mass 10 g weighs 7 g in water. If its area of cross-section is 0.75 cm^2, its length will be :

(A) 4 cm

(B) $\frac{40}{3}$ cm

(C) $\frac{28}{3}$

(D) known only in terms of its density

13. A distance is always :

(A) shortest length between two points

(B) length of actual path covered by an object between two points

(C) product of length and time

(D) none of the above

14. A piece of iron has dimensions 3cm × 1.5 cm × 6cm. If its mass is 205.2 gms, its density is :

(A) 5.6 gm cm^{-3} (B) 8.4 gm cm^{-3}

(C) 7.6 gm cm^{-3} (D) 76 gm cm^{-3}

15. A coconut is hanging on a tree at a height of 15 m from the ground. A boy launches a projectile vertically upwards with velocity 20 m/s. At what time the projectile will pass the coconut ?

($g = 10 m/s^2$)

(A) 1s (B) 3s

(C) 1s and 3s (D) 4s

16. A transformer is used to light a 120 W, 24 V lamp from 240 V Ac mains. The current in the main cable is 0.6 A. The efficiency of the transformer is :

(A) 48% (B) 63.8%

(C) 83.3% (D) 90%

17. The speed of sound in a certain medium is 960 m/s. If 3600 waves pass over a certain point in 1 minute, the wavelength is :

(A) 2 m (B) 4 m

(C) 8 m (D) 16 m

18. If a force F is applied on a body and it moves with a velocity V, the power will be :

(A) F × V (B) F/V

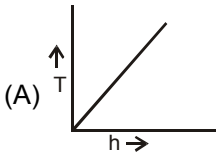
(C) F/V^2 (D) F × V^2

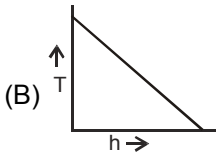
19. The distance between two stations is 200 km. A train travels for the first 100 km at a speed of 40 kmh^1. How fast should the train travel the next 100 km so as to average speed becomes 50 kmh^{-1} for the whole journey ?

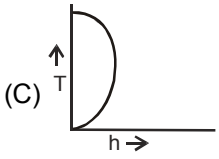
(A) 200/3 kmh^{-1} (B) 100 kmh^{-1}

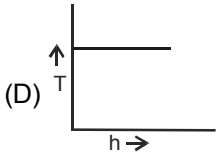
(C) 100/3 kmh^{-1} (D) 50/3 kmh^{-1}

20. Which of the following graphs best represents the total energy (T) of a freely falling body and its height (h) above the ground ?

(A) 

(B) 

(C) 

(D) 

Space For Rough Work

21. Chemical substances, grease, nylon, naphtha and polyester can be obtained from -
(A) Coal
(B) Petroleum
(C) Both of the above
(D) None of the above

22. The increasing order of the value of e/m (charge/mass) of an electron (e), proton (p), neutron (n) and alpha (α) particle is -
(A) e,p,n,α (B) n,p,e,α
(C) n,p, α, e (D) n,α, p, e

23. Electrons revolve in some definite circular orbits around the nucleus without emission of energy. This statement was given by -
(A) Rutherford (B) Bohr
(C) Thomson (D) Somerfield

24. Which one of the following is a penta-atomic molecule ?
(A) CO_2 (B) PCl_5
(C) $POCl_3$ (D) C_2H_6

25. The number of molecules in 16.0 g of oxygen is -
(A) 6.02×10^{23} (B) 6.02×10^{-23}
(C) 3.01×10^{-23} (D) 3.01×10^{23}

26. Which of the following sets of ions is present in potassium sulphate (K_2SO_4) ?
(A) K^+, SO_4^{2-} (B) K^{+4}, SO^{2-}
(C) K^{+2}, SO_4^- (D) K^+,SO_4^-

27. The change of state of substance from gas to liquid is called -
(A) melting (B) boiling
(C) condensation (D) vaporization

28. The magnitude of intermolecular forces of attraction is maximum in-
(A) chalk powder (B) water
(C) carbon dioxide (D) hydrogen

29. Which of the following provides an example of a true solution ?
(A) Blood (B) Milk
(C) Starch solution (D) Sugar solution

30. Which process is used for separation of two miscible liquids on the basis of difference in their boiling points ?
(A) Crystallization
(B) Filtration
(C) Fractional distillation
(D) Sublimation

31. Female sex hormone is
(A) oestrogen (B) ADH
(C) insulin (D) adrenalin

32. Both pulmonary and renal arteries.
(A) contain oxygenated blood
(B) have internal valves
(C) deliver CO_2 to the organs they supply
(D) have thick wall and narrow lumen

33. Non membranous cell organelle is :
(A) Mitochondria (B) Nucleus
(C) Lysosomes (D) Ribosomes

34. Which one has vascular tissue, produces spores but lack seeds ?
(A) Bryophyta (B) Pteridophyta
(C) Gymnosperm (D) Angiosperms

35. Which of the following has incompletely four chambered heart ?
(A) Mammals (B) Amphibians
(C) Birds (D) Reptiles

Space For Rough Work

36. Animals giving birth to young ones are :
(A) viviparous (B) oviparous
(C) ovoviviparous (D) coelomate

37. Congenital diseases are those which :
(A) are deficiency diseases
(B) are present from time of birth
(C) are spread from man to man
(D) occur during life time

38. Fluid part of blood after removal of corpuscles is:
(A) Plasma (B) Lymph
(C) Proteins (D) Vaccine

39. The permanent tissue having localized thickening of pectin is :
(A) Parenchyma (B) Collenchyma
(C) Sclerenchyma (D) Xylem

40. Ozone hole refers to :
(A) hole in ozone layer
(B) reduction in thickness of ozone layer in stratosphere
(C) reduction in thickness of ozone layer in troposphere
(D) increase in concentration of ozone

41. Which one of the following taxes in colonial India had the most severe effect on pastoralists?
(A) Grazing tax (B) Pass or permit tax
(C) Tax per cattle (D) Land revenue

42. This programme provides for 100 days assured employment every year to every rural household in 200 districts.
(A) NFWP (B) PMRY
(C) NREGA (D) All the above

43. Out of four main factors of production one is
(A) raw material. (B) stock.
(C) labour. (D) building.

44. Food security depends on the :
(A) Public Distribution system
(B) Government vigilance and action at times when this security in threatened
(C) Public Awareness
(D) Both (A) and (B)

45. The standard meridian of India passes through:
(A) Bhagalpur (B) Lucknow
(C) Mirzapur (D) Dehradun

46. Poverty in China has declined due to
(A) massive investments in human resource.
(B) population control.
(C) communist government.
(D) industrialization.

47. Plant community that has grown naturally without human aid and has been left undisturbed by humans for a long time is called
(A) mediterranean vegetation.
(B) tundra vegetation.
(C) virgin vegetation.
(D) taiga vegetation.

48. Which German expert was invited in India by the British for advice and was made the first Inspector General of Forests in India ?
(A) Tuscany (B) E.P. Stebbing
(C) Dietrich Brandis (D) George Yule

Space For Rough Work

49. Over the late eighteenth and nineteenth centuries in the English countryside at the beginning of each year, at a public meeting each villager was allocated a number of -
(A) Animals to rear
(B) Strips to cultivate
(C) Machines to start his own industries
(D) Slaves

50. The Munich pact has been called the last act of appeasement because :
(A) It was signed in 1938
(B) Hitler attacked Poland on 1st Sept. 1939
(C) Mussolini attacked Greece
(D) Mussolini attacked Ethiopia

Directions : (51 to 52) *Find the missing numbers :*

51. 2, 5, 7, 12, 15, 17, 22, ?
(A) 25 (B) 26
(C) 27 (D) 28

52.

1	5	9
4	8	12
7	(?)	15

(A) 11 (B) 12
(C) 13 (D) 16

53. If **HEMANT** is coded as **854152**, how would we code **MONIKA** ?
(A) 465911 (B) 464921
(C) 465912 (D) 465921

54 Which letter will be the eighth to the right of the seventh letter from the left end of the English alphabets ?
(A) R (B) O
(C) K (D) Q

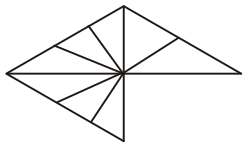
55. Pointing to a man Usha said "He is the brother of the daughter of the wife of my husband". How is the man related usha ?
(A) Son (B) Husband
(C) Cousin (D) Nephew

Direction : (56) Arrange the following group such that when arranged in a specific order, meaningful word is formed.

56. **R T A O U H**
1 2 3 4 5 6
(A) 1, 3, 4, 5, 6, 2 (B) 2, 3, 6, 4, 5, 1
(C) 6, 3, 2, 4, 5, 1 (D) 3, 5, 2, 6, 4, 1

57. '**Match**' is related to '**Win**' in the same way as '**Examination**' is related to ?
(A) Write (B) Appear
(C) Success (D) Attempt

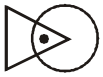
58. How many triangle does the following figure have?

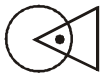


(A) 14 or more (B) 12 to 13
(C) 10 to 11 (D) 7 to 9

Space For Rough Work

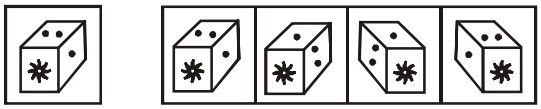
Direction : (59) In each of the following questions, there are figures of which three are similar in a certain way, and one is different. Find the one that is different from the rest.

59. (A)  (B) 

(C)  (D) 

Direction: (60) In each of the following questions, choose the correct mirror image from alternatives A, B, C, and D of the figure (X).

60.



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

Space For Rough Work