



# IGNITE

## SAMPLE TEST PAPER

ACADEMIC SESSION : 2017-18  
CLASS - X



Time : 1½ Hr.

Date : 29-04-2017

Maximum Marks : 100

### GENERAL INSTRUCTIONS

1. In Mathematics, Physics, Chemistry, Biology each question carry 2(two) marks and in Social Science and Mental Ability each question carry 1 (one) mark.
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. There is 1/4 negative marking for each wrong answer. So attempt each question carefully.
7. 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.
8. In case of any dispute, the answer filled in the OMR sheet available with the institute shall be final.
9. Post exam Answer Key will be declared. Correction in Answer Key will be accepted till next 36 hours after which no correction will be entertained.



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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 (D) 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)  $24\pi r^3$

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

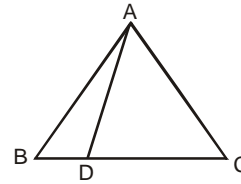
5. One of the factors of the expression  $(2a + 5b)^3 + (2a - 5b)^3$  would be -

(A)  $4a$  (B)  $10b$   
(C)  $2a + 5b$  (D)  $2a - 5b$

6. In a  $\Delta PQR$ , 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  $\Delta ABC$  in the ratio  $m : n$ , then the  $\text{ar}(\Delta ABD) : \text{ar}(\Delta ADC)$  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

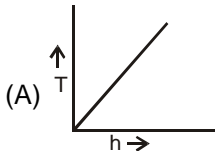
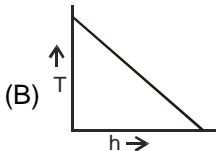
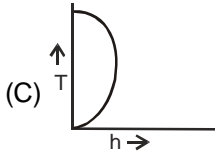
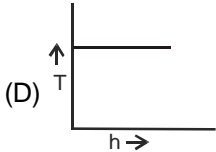
9. If  $\frac{\left(a + \frac{1}{b}\right)^p \times \left(a - \frac{1}{b}\right)^q}{\left(b + \frac{1}{a}\right)^p \times \left(b - \frac{1}{a}\right)^q} = \left(\frac{a}{b}\right)^x$  then what

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  $D = 0.a_1a_2a_1a_2\dots$  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)  $2F$  (D)  $4F$
12. A cylinder of mass 10 g weighs 7 g in water. If its area of cross-section is  $0.75 \text{ cm}^2$ , 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 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  $3\text{cm} \times 1.5 \text{ cm} \times 6\text{cm}$ . If its mass is 205.2 gms, its density is :
- (A)  $5.6 \text{ gm cm}^{-3}$  (B)  $8.4 \text{ gm cm}^{-3}$   
 (C)  $7.6 \text{ gm cm}^{-3}$  (D)  $76 \text{ gm cm}^{-3}$
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 ?  
 ( $g = 10\text{m/s}^2$ )
- (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)  $F \times V$  (B)  $F/V$   
 (C)  $F/V^2$  (D)  $F \times V^2$
19. The distance between two stations is 200 km. A train travels for the first 100 km at a speed of  $40 \text{ kmh}^{-1}$ . How fast should the train travel the next 100 km so as to average speed becomes  $50 \text{ kmh}^{-1}$  for the whole journey ?
- (A)  $200/3 \text{ kmh}^{-1}$  (B)  $100 \text{ kmh}^{-1}$   
 (C)  $100/3 \text{ kmh}^{-1}$  (D)  $50/3 \text{ kmh}^{-1}$
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 ( $\alpha$ ) particle is -  
 (A) e,p,n, $\alpha$  (B) n,p,e, $\alpha$   
 (C) n,p,  $\alpha$ , e (D) n, $\alpha$ , 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)  $\text{CO}_2$  (B)  $\text{PCl}_5$   
 (C)  $\text{POCl}_3$  (D)  $\text{C}_2\text{H}_6$
25. The number of molecules in 16.0 g of oxygen is -  
 (A)  $6.02 \times 10^{23}$  (B)  $6.02 \times 10^{-23}$   
 (C)  $3.01 \times 10^{-23}$  (D)  $3.01 \times 10^{23}$
26. Which of the following sets of ions is present in potassium sulphate ( $\text{K}_2\text{SO}_4$ ) ?  
 (A)  $\text{K}^+$ ,  $\text{SO}_4^{2-}$  (B)  $\text{K}^{+4}$ ,  $\text{SO}^{2-}$   
 (C)  $\text{K}^{+2}$ ,  $\text{SO}_4^-$  (D)  $\text{K}^+$ ,  $\text{SO}_4^-$
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) Distillation  
 (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  $\text{CO}_2$  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

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*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 cellulose 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 is 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

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*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

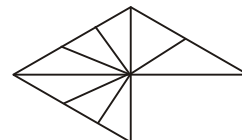
1 2 3 4 5 6

- (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?

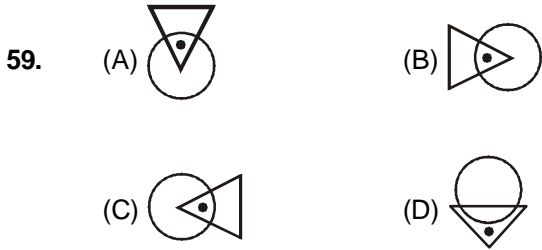


- (A) 14 or more (B) 12 to 13  
 (C) 10 to 11 (D) 7 to 9

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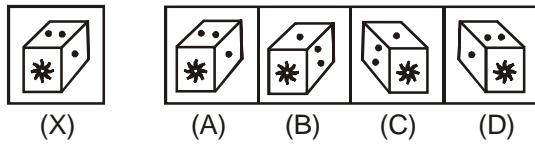
*Space For Rough Work*

**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.



**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.




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*Space For Rough Work*

**CLASS - X ( ANSWER KEY )**

<b>Ques</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>Ans.</b>	C	C	D	B	A	B	B	B	A	A	B	A	B	C	C
<b>Ques</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<b>Ans.</b>	C	D	A	A	D	B	D	B	C	D	A	C	A	D	C
<b>Ques</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>
<b>Ans.</b>	A	D	D	B	D	A	B	A	A	B	A	C	C	D	C
<b>Ques</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>
<b>Ans.</b>	A	C	C	B	B	A	A	D	B	A	D	C	A	D	D