



INDIAN SCHOOL AL WADI AL KABIR

Class X, Mathematics

STATISTICS WORKSHEET 6

OBJECTIVE TYPE (1 Mark)

Q.1. In a frequency distribution, the mid value of a class is 12.5 and the width of the class is 5. Then the lower limit of the second class is

A 20.5 **B** 15.5 **C** 15 **D** 10.5

Q.2. Consider the following frequency distribution of the heights of 60 students of a class:

Height (in cm)	250 – 255	255 – 260	260 – 265	265 – 270	270 – 275	275 – 280
Number of students	13	15	10	8	9	5

The difference of the lower limit of the modal class and upper limit of the median class is

A 15 **B** 10 **C** 20 **D** 5

Q.3. The median and mode of a distribution are 41.2 and 43.4 respectively. Then its mean is

A 40.1 **B** 41.1 **C** 43.3 **D** 39.8

Q.4. The mean of the following distribution is

Classes	0 - 10	10 - 20	20 - 30	30 - 40
Frequency	1	2	2	1

A 22 **B** 16 **C** 18 **D** 20

Q.5. If the mean of five observations is 20, and one of them is 24, what is the mean of the remaining four observations?

A 19 **B** 18 **C** 20 **D** 22

Q.6. Find the sum of the class marks of classes 10-25 and 35-55.

A 45.5 **B** 17.5 **C** 62.5 **D** 62

Q.7. If the mean of frequency distribution is 7.5 and $\sum f_i x_i = 120 + 3k$, $\sum f_i = 30$, then k is equal to:

A 40 **B** 35 **C** 50 **D** 45

Q.8. The runs scored by a batsman in 35 different matches are given below:

Runs scored	0 - 15	15 - 30	30 - 45	45 - 60	60 - 75	75 - 90
Frequency	5	7	4	8	8	3

Number of matches in which the batsman scored less than 60 runs are

A 16 **B** 24 **C** 8 **D** 19

Q.9. For the following distribution, the modal class is

Marks	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60
No. of students	3	12	27	57	75	80

A 10 - 20 **B** 20 - 30 **C** 30 - 40 **D** 50 - 60

Q.10. Consider the following distribution:

Marks obtained	Number of students
More than or equal to 0	68
More than or equal to 10	53
More than or equal to 20	50
More than or equal to 30	41
More than or equal to 40	38

	More than or equal to 50		35																													
Then, the frequency of the class 40-50 is																																
	A	3	B	6	C	5	D	4																								
ASSERTION AND REASONING																																
DIRECTION: A statement of Assertion (A) is followed by a statement of Reason (R) . Choose the correct option. (a)Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true.																																
Q.11.	Assertion(A): If the median of the given data 26, 29, 42, 53, x, x+2, 70, 75, 82, 93 is 65 then the value of x is 64. Reason(R): When the number of observations (n) is odd the median is the value of the $\left(\frac{n+1}{2}\right)^{th}$ observation.																															
Questions of 2 marks each																																
Q.12.	Given below is a cumulative frequency distribution of less than type. <table><tr><td>Marks obtained</td><td>Less than 20</td><td>Less than 30</td><td>Less than 40</td><td>Less than 50</td></tr><tr><td>No. of students</td><td>8</td><td>13</td><td>19</td><td>24</td></tr></table> Change the above data into a continuous grouped frequency distribution.								Marks obtained	Less than 20	Less than 30	Less than 40	Less than 50	No. of students	8	13	19	24														
Marks obtained	Less than 20	Less than 30	Less than 40	Less than 50																												
No. of students	8	13	19	24																												
Q.13.	Find the mean of first 5 odd multiples of 5.																															
Q.14.	Find x ,y and the median class from the following cumulative frequency distribution. <table><tr><td>Classes</td><td>Frequency</td><td>c.f.</td></tr><tr><td>0-8</td><td>15</td><td>15</td></tr><tr><td>8-16</td><td>x</td><td>28</td></tr><tr><td>16-24</td><td>15</td><td>43</td></tr><tr><td>24-32</td><td>18</td><td>y</td></tr><tr><td>32-40</td><td>9</td><td>70</td></tr></table>								Classes	Frequency	c.f.	0-8	15	15	8-16	x	28	16-24	15	43	24-32	18	y	32-40	9	70						
Classes	Frequency	c.f.																														
0-8	15	15																														
8-16	x	28																														
16-24	15	43																														
24-32	18	y																														
32-40	9	70																														
Q.15.	The mean of 100 observations are 49. It was discovered that three items which should have been 60, 70, 80 were wrongly read as 40, 20, 50 respectively. Then find the correct mean.																															
Q.16.	Determine the missing frequency x, from the following data when mode is 67 <table><tr><td>Class</td><td>40 - 50</td><td>50 - 60</td><td>60 - 70</td><td>70 - 80</td><td>80 - 90</td></tr><tr><td>Frequency</td><td>5</td><td>x</td><td>15</td><td>12</td><td>7</td></tr></table>								Class	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	Frequency	5	x	15	12	7												
Class	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90																											
Frequency	5	x	15	12	7																											
Questions of 3 marks each																																
Q.17	Find the unknown entries a, b, c, d, e and f in the following distribution. <table><tr><td>Height (in cm)</td><td>Frequency</td><td>Cumulative frequency</td></tr><tr><td>150-155</td><td>a</td><td>14</td></tr><tr><td>155-160</td><td>6</td><td>b</td></tr><tr><td>160-165</td><td>c</td><td>35</td></tr><tr><td>165-170</td><td>11</td><td>d</td></tr><tr><td>170-175</td><td>e</td><td>56</td></tr><tr><td>175-180</td><td>f</td><td>60</td></tr><tr><td>Total</td><td>60</td><td></td></tr></table>								Height (in cm)	Frequency	Cumulative frequency	150-155	a	14	155-160	6	b	160-165	c	35	165-170	11	d	170-175	e	56	175-180	f	60	Total	60	
Height (in cm)	Frequency	Cumulative frequency																														
150-155	a	14																														
155-160	6	b																														
160-165	c	35																														
165-170	11	d																														
170-175	e	56																														
175-180	f	60																														
Total	60																															
Q.18.	The daily wages (in rupees) of 100 workers in a factory are given below. <table><tr><td>Daily wages (₹)</td><td>1250-1300</td><td>1300-1350</td><td>1350-1400</td><td>1400-1450</td><td>1450-1500</td><td>1500-1550</td></tr><tr><td>No. of workers</td><td>6</td><td>20</td><td>24</td><td>28</td><td>15</td><td>7</td></tr></table> Find the median wages of a worker for the above data.								Daily wages (₹)	1250-1300	1300-1350	1350-1400	1400-1450	1450-1500	1500-1550	No. of workers	6	20	24	28	15	7										
Daily wages (₹)	1250-1300	1300-1350	1350-1400	1400-1450	1450-1500	1500-1550																										
No. of workers	6	20	24	28	15	7																										

Q.19.	The following distribution gives the daily income of 50 workers of a factory.								
	Daily income (in Rupees)	250–300	300–350	350–400	400–450	450–500			
	Number of workers	12	14	8	6	10			
Find the mean for the above data.									
Q.20	The following table gives the height of trees:								
	Height	Less than 7	Less than 14	Less than 21	Less than 28	Less than 35	Less than 42	Less than 49	Less than 56
	No . of trees	26	57	92	134	216	287	341	360
Find mode for the given data.									
Q.21.	The frequency distribution of daily rainfall in a town during a certain period is shown below.								
	Rainfall(in mm)				Number of days				
	0 – 20				7				
	20 – 40				x				
	40 – 60				10				
60 – 80				4					
Unfortunately, due to errors, the information on the 20 – 40 mm range got deleted from the data. If the mean daily rainfall for the period was 35 mm, find the number of days when the rainfall ranged between 20 – 40 mm. Show your work									
Questions of 5 marks each									
Q.22.	The following table gives the life time of 200 bulbs. Calculate the mean life time of a bulb.								
	Life time (in hours)	400-499	500-599	600-699	700-799	800-899	900-999		
	Number of bulbs	24	47	39	42	34	14		
Q.23.	Find mean, median and mode for the following distribution.								
	Class	0-10	10-20	20-30	30-40	40-50			
	Frequency	5	27	58	20	10			
CASE STUDY QUESTION: In a Vidyalaya there are two sections A and B. 39 students are there in section A and in section B there are 41 students. A periodic test was conducted to assess the performance of students thereafter analyze and plan the teaching learning process accordingly. The marks obtained out of 40 are given below in the table.									

Q.25.	How many students have obtained more than or equal to 35 marks?							
Q.26.	Find the median of the marks obtained.							
Q.27.	Find the mode of the marks obtained.							
	ANSWERS							
	Q.1.	C	Q.2.	B	Q.3.	A	Q.4.	D
	Q.5.	A	Q.6.	C	Q.7.	B	Q.8.	B
	Q.9.	C	Q.10.	A	Q.11.	a	Q.12.	cumulative frequency distribution table
	Q.13.	25	Q.14.	x =13, y =61, 16-24	Q.15.	50	Q.16.	x = 8
	Q.17.	a=14, b=20, c=15, d=46	Q.18.	1400	Q.19.	363	Q.20.	33.49
	Q.21.	x= 23	Q.22.	678 hours	Q.23.	25.25, 24.83, 24.49	Q.24.	table
	Q.25.	9	Q.26.	23.57	Q.27.	28.06		
