**JNV**

**MODEL QUESTIONS**

**MATHEMATICS: 14 STATISTICS**

**Class : X**

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| 1 | Find the median class of the following data: C:\fake\image1.png | 1 |
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|  | ANS:     C:\fake\image2.png |  |
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| 2 | The shirt sizes worn by a group of 200 persons, who bought the shirt from a store are as follows: C:\fake\image3.pngFind the modal shirt size worn by the group. | 1 |
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|  | ANS:     Since size 40 is worn by maximum persons i.e., 41 C:\fake\image4.png  Modal shirt size will be 40. |  |
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| 3 | The following table shows the cumulative frequency distribution of marks of 800 students in an examination: C:\fake\image5.png Construct a frequency distribution table for the data above. | 2 |
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|  | ANS:     Frequency distribution table: C:\fake\image6.png |  |
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| 4 | The arithmetic mean of the following frequency distribution is 50. Find the value of p. C:\fake\image7.png | 3 |
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|  | ANS:     C:\fake\image8.png C:\fake\image9.pngC:\fake\image10.png  50 × 92 + 50p = 5160 + 30p C:\fake\image11.png  50p – 30p = 5160 – 4600 C:\fake\image12.png  20p = 560 C:\fake\image13.png  p = C:\fake\image14.png= 28 |  |
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| 5 | The median of the following data is 52.5. Find the values of x and y, if the total frequency is 100. C:\fake\image15.png | 3 |
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|  | ANS:     C:\fake\image16.png As given C:\fake\image17.pngfi = 100 C:\fake\image18.png  76 + x + y = 100 C:\fake\image19.png  x + y = 24 ...(i) Median = 52.5, n = 100 C:\fake\image20.png  C:\fake\image21.png= 50 Median class is 50 – 60 (as given median is 52.5.) C:\fake\image22.png  Using formula for the median. 52.5 = 50 + C:\fake\image23.png = C:\fake\image24.png 52.5 – 50 = C:\fake\image25.png C:\fake\image26.png  2.5 × 2 = 14 – x C:\fake\image27.png  5 = 14 – x C:\fake\image28.png  x = 14 – 5 = 9 Putting in equation (i) we get 9 + y = 24 C:\fake\image29.png  y = 24 – 9 = 15 |  |
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| 6 | Find the unknown entries a, b, c, d, e and f in the following distribution and hence find their mode. C:\fake\image30.png | 4 |
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|  | ANS:     C:\fake\image31.png Here, a = 12, Now 12 + b = 25 C:\fake\image32.pngb = 13 25 + 10 = c C:\fake\image33.pngc = 35 c + d = 43 C:\fake\image34.png35 + d = 43 C:\fake\image35.pngd = 8 43 + e = 48 C:\fake\image36.pnge = 5, 48 + 2 = f C:\fake\image37.pngf = 50 C:\fake\image38.png  a = 12, b = 13, c = 35, d = 8, e = 5, f = 50 So given distribution becomes C:\fake\image39.png Modal class is 155 – 160 l = 155, f0 = 12, f1 = 13, f2 = 10, h = 5 Mode = C:\fake\image40.png= 155 × C:\fake\image41.png× 5 = 155 + C:\fake\image42.png= 155 + 1.25 = 156.23 |  |
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| 7 | Draw ‘less than ogive’ and ‘more than ogive’ for the following distribution and hence find its median. C:\fake\image43.png | 4 |
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|  | ANS:     Table for ‘less than ogive’ and ‘more than ogive’ C:\fake\image44.png ‘Less than ogive’ and ‘more than ogive’. C:\fake\image45.pngWe notice both the curves intersect at (50, 50) ∴  Median = 50. |  |
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