# Pabna Cadet College

Second Term-End Exam - 2021

Subject: Statistics

Class: XI

Time: - Full Marks: 80

Answer all the question.

MCQ

1. Who invented Stem and Leaf display?

a. Karl Pearson
b. R.A. Fisher
c. W.I. King
d. John Tukey ***

2. H.G. Sturges rule for determining number of classes (k)-

a. $K = 1 + 3.322 \log N$ ***
b. $K = 1 + 2.322 \log N$
c. $K = 1 + 3.222 \log N$
d. $K = 1 - 3.322 \log N$

3. Formula to measure angles for a pie-chart-

a. $\theta_i = \frac{f_i}{N} \times 360^o$ ***
b. $\theta_i = \frac{N}{f_i} \times 360^o$
c. $\theta_i = \frac{f_i}{N-1} \times 360^o$
d. $\theta_i = \frac{N-1}{f_i} \times 360^o$

4. If there are numerous categories in a data, which graph would be perfect?

a. Histogram
b. Pie chart
c. Bar Diagram ***
d. Frequency polygon

5. Which graph requires cumulative frequencies?

a. Histogram
b. Ogive ***
c. Frequency polygon
d. Pie chart

6. "50 students scored less than or equal to 60 marks"- which of the following can directly give such information?

a. Histogram
b. Pie chart
c. Bar diagram
d. Ogive ***

7. Which diagram shows times series data?

a. Histogram
b. Frequency curve
c. Bar diagram
d. Historigram ***

8. Consider the following table

| District | Rajshahi | Chapainawabganj | Rangpur | Pabna | Natore |
|---|---|---|---|---|---|
| Mango Production | 750 | 800 | 500 | 450 | 380 |

Which diagram is suitable for displaying data?

i. Histogram
ii. Pie chart
iii. Bar chart

a. i
b. i & ii
c. ii & iii
d. i, ii, & iii

9. Which of the following is NOT an attribute of a good classification?

a. Stability
b. Unambiguity
c. Flexibility
d. Attractiveness ***

10. Which is a characteristic of secondary data?

a. It is very reliable
b. It provides data in the form the researcher desires
c. It is less costly ***
d. It does not require precautions by the user.

11. Which one is correct for positive skewness

a. Mean > Median < Mode
b. Mean = Median = Mode
c. Mean < Median < Mode
d. Mean > Median > Mode ***

12. Skewness of a symmetrical distribution is -

a. 1
b. 0 ***
c. -1
d. Median

13. The first raw moment about 2 is 6. What is value of the arithmetic mean? (2 marks)

a. 4
b. 12
c. 8 ***
d. 2

14. Karl Pearson's method of coefficient of skewness- (2 marks)

a. $SK_p = \frac{\bar{X}-Mo}{\sigma}$ ***
b. $SK_p = \frac{Q_3+Q_1-2Me}{Q_3-Q_1}$
c. $SK_p = \frac{D_9+D_1-2Me}{D_9-D_1)}$
d. $Sk_p = \frac{\bar{X}-\sigma}{Mo}$

15. What is value of $\beta_1$ for a symmetrical distribution?

a. -1
b. 3
c. 1
d. 0 ***

16. Second central moment of first n natural numbers

a. $\frac{n^2+1}{12}$
b. $\frac{n^2-1}{12}$ ***
c. $\frac{n^2}{n+1}$
d. $\frac{n^2-2}{12}$

17. First moment about 2 is -1. What is the moment about 5? (2 marks)

a. -4 ***
b. 4
c. 7
d. 6

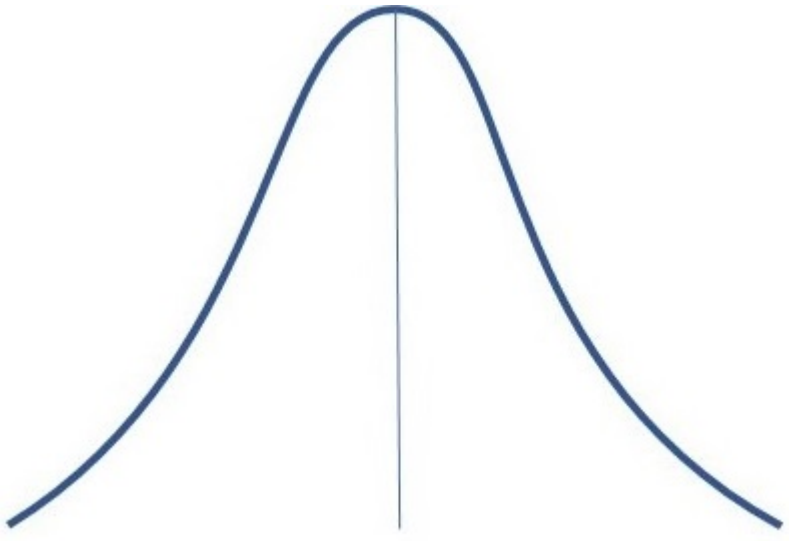
18. In a distribution, Mean = 65, Median = 70 and coefficient of skewness = -0.5. What is coefficient of variation? (2 marks)

a. 50%
b. 41.65%
c. 46.15% ***
d. 65.14%

19. Five number summary consist of-

a. Arithmetic mean, three quartiles, and median
b. Range, three quartiles, and variance
c. Lowest value, mean, median, mode, and highest value
d. Lowest value, three quartiles, and highest value ***

20. Which is not true about this graph? (2 marks)



a. Most values have small frequencies ***
b. Most numbers lie around the average value
c. A representation of symmetric distribution
d. Few values have small frequencies

21. What is the correct relationship?

a. $\frac{b_{yx}+b_{xy}}{2} \leq r$ ***
b. $\frac{b_{yx}+b_{xy}}{2} \geq r$
c. $\frac{b_{yx}+b_{xy}}{2} = r$
d. $\frac{b_{yx}\times b_{xy}}{2} \geq r$

22. $\beta = 0.25$; What is not a correct interpretation?

a. $\beta$ is equivalent to slope of a straight line
b. $\beta$ represents average increase in dependent variable due to independent variable.
c. If independent variable increases 1 unit, dependent variable increase 0.25 units, on average.
d. The relationship between dependent and independent variable is weak ***

23.

a.

b.

c.

d.

24.

a.

b.

c.

d.

25.

a.

b.

c.

d.

26.

a.

b.

c.

d.

27.

a.

b.

c.

d.

28.

a.

b.

c.

d.

29.

a.

b.

c.

d.

30.

a.

b.

c.

d.

31.

a.

b.

c.

d.

32.

a.

b.

c.

d.

33.

a.

b.

c.

d.

34.

a.

b.

c.

d.

35.

a.

b.

c.

d.

36.

a.

b.

c.

d.

37.

a.

b.

c.

d.

38.

a.

b.

c.

d.

39.

a.

b.

c.

d.

40.

a.

b.

c.

d.