

# Nagarjuna College of Information Technology

Shankhamul -09, Lalitpur

## Pre-Board Examination 2079

Bachelor in Computer Applications  
Course Title: Probability & Statistics  
Code No: CAST 202  
Semester: III

Full Marks: 60  
Pass Marks: 30  
Time: 3 hours

Name:

Roll No:

*Candidates are required to answer the questions in their own words as far as possible.*

### Group A

Attempt All Questions:

[10×1=10]

1. How do you obtained degree of freedom in one-way ANOVA ?

- a. (k, n-1)   b. k, n-k   c. k-1, n-1   d. k-1, n-k

2. What is standard normal variate ?

- a.  $\frac{X+\mu}{6}$    b.  $\frac{X-\mu}{6}$    c.  $\frac{X-\mu}{5}$    d. none

3. Which measure of location is used to determine average size of shoes ?

- a. AM   b. GM   c.  $M_d$    d.  $m_0$

4. What are parameters of normal distribution?

- a.  $\mu$  and  $\lambda$    b.  $\mu$  and  $\sigma$    c.  $\mu$  and  $p$    d.  $p$  and  $q$

5. When observations are classified according to two factors then what is called it ?

- a. one-way ANOVA   b. Two-way ANOVA   c. three-way ANOVA   d. none

6. One-way classification has 4 rows and 16 observation then what is the degree of freedom for ANOVA ?

- a. (3, 12)   b. (4,12)   c. (12,16)   d. (4, 16)

7. Which measure of dispersion is used to compare variability of age of student in morning shift and day shift?

- a. CV   b. SD   c. Mean   d. Median

8. Marks secured by students in a test are 12,9,14,10,16 what is median marks ?

- a. 10   b. 12   c. 14   d. 16

9. What type of data is first hand and unorganized form of data ?

- a. secondary data   b. organized data   c. primary data   d. none of the data

10. What is name given to data which can be ranked ?

- a. categorized data   b. Nominal data   c. ordinal data   d. ratio data

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### Group B

Attempt any six

[6×5=30]

11. Write short notes on simple random sampling.

12. Describe scope and limitation of statistics.

13. Find the regression equation of weight on age using method of least square and estimate the weight of body at the age of 4 month. From the given data.

Age in months	0	2	3	5	6
Weight in lbs	5	7	8	10	12

14. The weight in gms of a number of copper wires each of length 1m were obtained. Those are shown below classified according to die from which they come

Die no					
I	II	III	IV	V	
2	0	4	3	2	
4	7	1	1	4	
8	5	3	5	2	
7	6	0	3	5	
4		5	4		
9		2			

Are the weight of copper wire for different die are unequal ?

15. From the given data below calculate the value of  $Q_1$ ,  $Q_2$ ,  $Q_3$ ,  $D_9$ ,  $P_{45}$

Height (cm)	161-167	167-173	173-179	179-185	185-191	191-197
No. of persons	79	92	60	22	5	2

16. Messages arrive at an electronic message center at random order, with an average of 10 message per hour.

a. What is the probability of receiving at least three messages during the next hour ?

b. What is the probability of receiving exactly five messages during the next three hours ?

17. In a bag there are 30 tickets numbered from 1 to 30. A ticket is drawn at random then find the probability that ticket number is multiple of

i. 4 or 9    b. 3 or 7

### Group C

**Attempt any two question.**

**[2×10=20]**

18. In the normal distribution, 31% of the items are under 45 and 8% are over 64. Find the mean and standard derivation of the distribution.

19. Fit the binomial distribution form the given data where  $p=0.5$

No. of heads	0	1	2	3	4
Frequency	28	62	46	20	4

20. Following are sample of ages of 6 male and 6 female enrolled in hardware training program of computer.

Age of male	23	30	18	25	32	40
Age of female	20	35	44	27	41	38

Find which gender has uniform age ?