Jain College, Jayanagar
I PUC Mock Paper 2017
Sub: STATISTICS

Duration: 3 Hrs 15 mins **Max.Marks**: **100**

Note: 1. Statistical tables and graph sheets will be supplied.
2. Scientific calculators are allowed.
3. All working steps should be clearly shown.

PART – A

I. Answer any ten questions: **1×10 =10**

1. What is a variable?
2. What is meant by a sample survey?
3. What is tabulation?
4. What is manifold classification?
5. What is a histogram?
6. Write one limitation of diagrammatic representation.
7. Write the formula to calculate mode for continuous data.
8. Find the geometric mean of 1,4 and 16.
9. What are scatter diagram?
10. What is interpolation?
11. Write the sample space, when two coins are tossed once.
12. Express variance in terms of expectation.

PART – B

II. Answer any 10 questions: **2×10 =20**

13. State Prof. Horace Secrists definition of statistics.
14. Name the two sources of secondary data.
15. Define inclusive and exclusive class-interval
16. Mention different types of classification.
17. Mention two uses of graphs.
18. Mention the averages obtained by histogram and ogives.
19. Write the properties of mean.
20. Find standard deviation: 30,18,26,43,27,33,10,12.
21. Mention two properties of regression lines.
22. Write the formula of Yule's co-efficient of Association.
23. State the addition theorem of probability
24. What is random variable? Give an example.

PART – C

III. Answer any 8 questions: **5×8 = 40**

25. Discuss the scope of statistics in: (a) Economics (b) Business

26. Explain methods collection of primary data.

27. The following are the weights of 20 students form a frequency distribution with class-intervals (35-39) (40-44) (45-49) and so on.

    Weights (kgs): 35,51,48,43,54,46,43,42,41,35,40,41,42,44,55,50,54,35,40,43

28. Represent the following data by component bar diagram.

Years	No. of public companies	No of private companies
2001	5000	20000
2002	4000	16000
2003	6000	18000
2004	7000	21000
2005	5000	15000

29. For the following distribution find median.

Mid points	90	110	130	150	170
Frequencies	5	7	4	2	6

30. Find the Harmonic mean for the following data.

C-I	7-7.1	7.1-7.2	7.2-7.3	7.3-7.4	7.4-7.5	7.5-7.6
f	5	13	18	14	7	3

31. The following data shows marks obtained by six students in statistics and mathematics compute spearman's rank correlation co-efficient.

Marks in statistics	61	40	85	100	63	75
Mark in Mathematics	50	55	82	99	70	75

32. In a co-educational institution out of 200 students. 150 were boys. In an examination 160 students were passed. 10 girls had failed is there any association between sex and success in the examination.

33. Using the binomial expansion method of interpolation find probable production of the year 2004.

Year	2000	2002	2004	2006
Value	103	107	-	157

34. An urn contains 6 red and 4 black marbles, 2 marbles are drawn at random from the urn. What is the probability that drawn balls are (i) same colour (ii) different colours.

35. Two cards are drawn from a pack of 52 playing cards what is the probability that they re (a) blacks (b) Queens (c) Blacks or Queens

36. A player tosses two fair coins. He gets Rs 50 if 2 heads occurs, Rs 20 if one head occurs and Rs 10 if no head occurs. Find his expected gain.

PART – D

IV. Answer any 2 questions: **10×2 =20**

37. Two cricketers scored the following runs in 8 innings. Find (a) who is a better scorer (b) who is more consistent

Cricketer A	49	20	18	54	60	100	0	90
Cricketer B	52	64	40	55	59	70	42	50

38. Calculate Bowley's co-efficient of skewness to the data based quartiles

Class-interval	25-30	30-35	35-40	40-45	45-50	50-55	55-60
f	2	8	18	27	25	16	7

39. Calculate Karl-Pearson's co-efficient of correlation for the following data.

x / y	80-90	90-100	100-110	110-120	120-130
52.5	1	3	7	5	2
57.5	2	4	10	7	4
62.5	1	5	12	10	7
67.5	-	3	8	6	3

40. (a) A box contains 4 green, 4 red, and 4 blue pens. Three pens are randomly drawn from the bag. What is the probability that they are if.

a) Same colour b) different colour (one of each colour) c) 2 red and 1 blue

(b) If X is a random variable a and b are constants. Then show that

E(a) = a, E(ax) = aE(x) and E(aX+b) = aE(x)+b

PART – E

V. Answer any 2 questions: **2 × 5 =10**

41. In a simple study about the food habits in two towns the following information was obtained.

Town A: 55% persons were males

35% were non-vegetarians

28% were male non-vegetarians

Town B: 52% persons were male

28% were non-vegetarians

26% were male non-vegetarians

42. From the following data. Draw a less than and more than o

Marks	<10	<20	<30	<40	<50	<60
No. of students	5	13	24	39	52	60

43. The average monthly wages and SD of 2 factories are given below

a) Which factory pays larger amount of wages?

b) Which factory has lesser variability?

	Factory A	Factory B
No. of workers	500 (x_1)	450(n_2)
Mean salary	900 $(\bar{x}_1)$	1250 $(\bar{x}_2)$
SD	100 (σ_1)	90 (σ_2)

44. If V(x) = 4, and E(x^2) = 20, find mean and standard deviation.

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