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OURTI	ı se	EMESTER B.Com. (U.G.)	DEC	GREE EXAMINATION, MARCH 2013
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		BC4 C04—QUANTITATIVE	TEC	HNIQUES FOR BUSINESS
ne : Three	Hou	rs		Maximum: 30 Weightage
		P	art A	L ,
	T	his part contains three bunches o Each bunch h Answer all t	as for	
A. Fill i	n the	blanks:		
		study of relationship between value to be ————.	ariabl	les, if there are only two variables, the correlatio
2 1	Rank	correlation method is used to stu	ıdy th	ne correlation between ———.
3 7	lhe q	uantitative expression of likelyh	ood o	f an event is termed as ———.
4 I	Poisso	on distribution is a ——— pr	obabi	lity distribution.
B. Choo	se the	e correct answer from the bracke	t:	•
5 I	f two	events are A and B; then A and	B is	written as:
	(a)	A ∪ B.	(b)	A ∕ _{B} .
	(c)	$A \cap B$.	(d)	$\bar{\mathbf{A}} \cap \bar{\mathbf{B}}$.
6 Í	Ieigh	t of the Normal curve is maximu	ım at	the point of:
	(a)	Standard deviation.	(b)	Mean.
	(c)	First Quartile.	(d)	Third Quartile.
7 V	Vhich	of the following is an example of	of Nor	n-parametric test ?
	(a)	Z test.	(b)	't' test.
	(c)	F test.	(d)	x^2 test.

(b) Only one can occur.

(d) None of these.

8 Two events are said to be mutually exclusive when:

(a) Both of them can occur.

(c) None can occur.

C.	Answer	in	one	word	:
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- 9. The Standard Deviation of a sampling distribution is called as:
- 10. Sign test is an example for:
- 11. The only parameter of a Poisson distribution is:
- 12. The % Area under Normal curve covered by Mean ± 1.96 Standard deviation is :

 $(12 \times \frac{1}{4} = 3 \text{ weights})$

Part B

Answer all **nine** questions in one **or** two sentences each. Each question carries a weightage of 1.

- 13. State any two uses of 't' distribution.
- 14. List two features of Bionomial distribution.
- 15. When are two events called independent?
- 16. What is ANOVA?
- 17. What are the two Errors in hypothesis testing.
- 18. Define Poisson distribution.
- 19. Distinguish between Normal distribution and Standard Normal distribution.
- 20. What is a hypothesis? Give one example.
- 21. Distinguish between Simple Correlation and Multiple Correlation.

 $(9 \times 1 = 9 \text{ weights})$

Part C

Answer any five questions. Each question carries a weightage of 2.

- 22. What are the properties of a Normal curve?
- 23. The data given below relates to price and quantity supplied of a commodity over a period 5 years.

Price (in Rs.)

Supply (in tons): 10 6

Calculate Pearson's Correlation Coefficient.

24. The odds against A solving a problem in statistics are 8 to 6 and odds in favour of B solving same problem are 14 to 16. What is the probability that (a) The problem is solved; (b) is not solved.

- 25. In a town 20 accidents took place in a span of 200 days. Assuming that number of accidents follow Poisson distribution, find the probability that there will be 3 or more accidents in a day.
- 26. The mean life of 100 electric bulbs produced by a company is found to be 1570 hours with a standard deviation of 120 hours. Test whether the bulbs could be considered as a random sample from a normal population with mean 1600 hours.
- 27. A die is tossed 120 times and the results obtained are :

No turned up : 1 2 3 4 5 6 Total

Frequency: 15 22 10 18 25 30 120

Test the hypothesis that die is unbiased.

- 28. A die is thrown. Find the probability of getting:
 - (a) An even number.
- (b) Number 3 up.

(c) 1 or 5 up.

(d) Number less than three.

 $(5 \times 2 = 10 \text{ weightage})$

Part D

Answer any two questions.

Each question carries a weightage of 4.

- 29. In a competitive examination 5000 students have appeared for a paper in Management. Their average marks was 62 and the standard deviation in marks was 12. If there are only 100 vacancies, find the minimum marks that one should score in order to get selection.
- 30. From the following data of the ages of husbands and ages of wives; find the regression equations of X on Y and Y on X. Also find the ages of wife when husband's age is 40.

Husband age X : 23 27 28 29 28 30 31 33 35 36

Wife's age Y: 18 20 27 21 22 29 27 29 28 29

31. Discuss the important Operations Research Techniques used in business.

 $(2 \times 4 = 8 \text{ weightage})$