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22ECU412N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BA DEGREE EXAMINATION MAY 2026
(Fourth Semester)

Branch - **ECONOMICS**

STATISTICAL METHODS - II

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	_____Index number is the arithmetic mean of Laspeyre's and Pasche's index number (a) Fisher (b) Walsch (c) Drobish-Bowley (d) kelly	K6	CO1
	2	Base year quantities are taken as weights in the case of..... (a) Paasche's index number (b) Laspeyre's index number (c)Fisher's index number (d) kelly's index number	K6	CO1
2	3	Graphical method is normally used to measure (a) Seasonal variation (b) Cyclic variation (c) Trend (d) Variation	K4	CO2
	4	Which one of the following represents the seasonal variation in the given data? (a) Seasonal variation (b) Cyclic variation (c) Trend (d) Variation	K4	CO2
3	5	The range of the probability is ..... (a) 0 to 1 (b) -1 to 1 (c) 1 to 0 (d) 1 to -1	K3	CO3
	6	.....is the probability of certain event (a) 1 (b) 0 (c) -1 (d) 0 and 1	K3	CO3
4	7	Which of the following distribution is bell shape ? (a) Binomial distribution (b) Poisson distribution (c) Normal distribution (d) Uniform distribution	K4	CO4
	8	Which of the following distribution is the rare event distribution? (a) Binomial distribution (b) Poisson distribution (c) Normal distribution (d) Uniform distribution	K4	CO4
5	9	Which of the following test is associated with Yates correction. (a) 't' test (b) 'F' test (c) Chi –square test (d) ANOVA	K3	CO5
	10	Which of the following is the assumption of ANOVA (a) Residual (b) Total sum of square (c) Normality (d) Error sum of square	K3	CO5

SECTION - B (35 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe the problem of constructing index numbers.	K6	CO1
		(OR)		
	11.b.	Construct index numbers of price from the following data by [i] Laspeyres method [ii] Paasche's method [iii] Bowley's method

Commodity	2006		2007	
	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

Cont...

2	12.a.	Explain the utility of Time series.	K4	CO2
		(OR)		
	12.b.	Below are given figures of production of a sugar factory Year: 2001 2002 2003 2004 2005 2006 2007 production: 80 90 92 83 94 99 92 Fit a straight line trend by the method of least squares.		
3	13.a.	A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of the ball drawn will be a multiple of (a) 5 or 7 (b) 3 or 7.	K3	CO3
		(OR)		
	13.b.	Find the probability of drawing a queen, a king and a knave in that order from a pack of cards in three consecutive draws, the cards drawn not being selected.		
4	14.a.	The mean of a Poisson distribution is 2.25. Find the other constants of the distribution.	K4	CO4
		(OR)		
	14.b.	Write a short notes on procedure of testing of hypothesis.		
5	15.a.	On the basis of information noted below, find out whether the new treatment is comparatively superior to the conventional one. Conventional: Favorable 40, Non favorable 70, Total 110 New: 60, 30, 90 Total: 100, 100, N=200	K3	CO5
		(OR)		
	15.b.	Two independent samples of sizes 9 and 7 from a normal population had the following values of the variables Sample I :18 13 12 15 12 14 16 14 15 Sample II:16 19 13 16 18 13 15 Do the estimates of the population variance differ significantly at 5% level?		

SECTION -C (30 Marks)

Answer **ANY THREE** questions
ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	From the chain base index numbers given below, obtain the fixed base index numbers Year: 2003 2004 2005 2006 2007 Chain indices: 80 110 120 90 140	K6	CO1
2	17	Describe the components of Time Series.	K4	CO2
3	18	List the properties of Normal distribution.	K3	CO3
4	19	types of drugs were used on 5 and 7 patients for reducing their weight. Drug A was imported and drug B indigenous. The decrease in the weight after using the drugs for six months was as follows. Drug A : 10 12 13 11 14 Drug B : 8 9 12 14 15 10 9 Is there a significant difference in the efficacy of the two drug? If not which the drug should you buy?	K4	CO4
5	20	A tea company appoints four salesmen A,B,C and D and observes their sales in three seasons –summer, Winter and monsoon. The figures (in lakhs) are given in the following table. Salesmen: A, B, C, D Summer: 36 36 21 35 — 128 Winter: 28 29 31 32 — 120 Monsoon: 26 28 29 29 — 112 Salesmen's Totals: 90 93 81 96 — 360 (i) Do the salesmen significantly differ in performance? (ii) Is there significant difference between the seasons?	K3	CO5

Z-Z-Z

END