

6/H-16 (vii) (Syllabus-2015)

2019

(April)

ECONOMICS

(Honours)

(Statistics)

Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking at least **one** from each Unit

UNIT—I

1. (a) The following table gives the frequency distribution of monthly income (in thousand rupees) of employees of a business unit with one of the figures missing :

Income	:	0-10	10-20	20-30	30-40	40-50
Frequency	:	5	—	15	16	6

Given that the arithmetic mean is 27.

Find the missing frequency.

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(2)

- (b) Calculate median and mode from the following data : 5+4=9

Marks	Frequency
30-40	5
40-50	22
50-60	63
60-70	74
70-80	30
80-90	6

2. (a) Distinguish between skewness and kurtosis. 3
- (b) The following results are obtained from a distribution :
Mean = 45, median = 48 and coefficient of skewness = -0.4
Find the value of standard deviation with the help of the available information. 4
- (c) Find the appropriate measure of skewness from the following distribution : 8

Age (in year)	Number of employees
Below 20	13
20-25	29
25-30	46
30-35	60
35-40	112
40-45	94
45-55	45
55 and above	21

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(3)

UNIT—II

3. (a) If $r = 0.28$, covariance of X and $Y = 7.6$, variance of $X = 9$, then find the standard deviation of Y (r is the correlation coefficient of X and Y). 5
- (b) In an examination, the marks obtained by 10 students in statistics and economics are given below :

Students	A	B	C	D	E	F	G	H	I	J
Marks in Statistics	51	91	60	68	62	86	58	53	47	84
Marks in Economics	78	36	98	25	75	82	90	62	65	39

Calculate rank correlation coefficient. 10

4. Find the regression coefficients of Y on X and X on Y from the following data :
- | | | | | | | | | |
|-------|---|---|----|----|----|----|----|----|
| X : | 8 | 9 | 10 | 10 | 11 | 13 | 14 | 16 |
| Y : | 4 | 6 | 8 | 12 | 13 | 15 | 17 | 28 |

Also find the regression equation of Y on X and estimate the value of Y , when $X = 12$.
8+5+2=15

UNIT—III

5. (a) Discuss the various problems in the construction of index numbers. 7

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(Turn Over)

(4)

- (b) Calculate the price index for the years 2011, 2012 and 2013 by using the simple aggregative method (taking 2010 as base year) from the following data : 8

Commodity	Price in ₹ per unit			
	2010	2011	2012	2013
A	20.50	22.00	24.50	28.50
B	16.00	18.50	23.00	25.50
C	12.00	19.00	21.00	24.00
D	15.50	21.00	24.00	27.00
E	32.00	35.50	37.00	43.00
F	22.50	26.00	31.50	38.50

6. (a) What are the components of time series? Explain them. 6
- (b) Find the trend values for the following series of observations using Moving Average Method : 9

Year	Sales (in crore ₹)
2001	53
2002	79
2003	76
2004	66
2005	69
2006	94
2007	95
2008	87
2009	79
2010	104
2011	97
2012	93
2013	101

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(5)

UNIT—IV

7. (a) In a lottery, there are 4 prizes and 96 blank slips. If a person holds one ticket, what is the chance of him getting a prize? 3
- (b) Find the mean and standard deviation of binomial distribution. 12
8. Explain any five of the following : 3×5=15
- (a) Advantages of sampling over census method
- (b) Sampling error
- (c) Interval estimation
- (d) Power of the test
- (e) Cluster sampling
- (f) Purposive sampling

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