MAR IVANIOS COLLEGE (AUTONOMOUS)
THIRUVANANTHAPURAM

Reg. No. :…… Name :……

Sixth Semester B.A. Degree Examination, April 2018
First Degree Programme under CBCSS
Core Course: Economics – XIII
AUEC643: Basic Tools for Economics II
(*Common for **Regular** – 2015 and **Reappearance** – 2014 Admn.*)

Time: 3 Hours Max. Marks: 80

SECTION – A

*Answer **ALL** the following terms each in one or two sentences.*

1. Correlation.
2. Dispersion.
3. Consumer Price Index.
4. Probability.
5. Regression.
6. Index number.
7. Scatter diagram.
8. Spurious correlation.
9. Statistical average.
10. Discrete variable.

(10 × 1 = 10 Marks)

SECTION – B

*Write short notes on any **EIGHT** of the following, not exceeding a paragraph.*

11. In a class there are 30 boys and 20 girls. From the class list one name is picked up at random. What is the probability that it is a boy's name?
12. Index numbers are called 'Economic Barometers' Why?
13. State the multiplication rule of probability.
14. Find the quartile deviation for the following values: 28, 32, 25, 42, 55, 82, 10, 25, 40, 38, 39?
15. What are the different measures of correlation?
16. Define the line of best fit.

17. Meaning of wholesale price index.
18. What is Purchasing Power Parity?
19. Explain the least square method of drawing a regression line.
20. Write down the formula for computing Karl Pearson coefficient of correlation and use the equation to find out the Pearsonian coefficient of correlation between x and y:

x	2	3	4	5	6	7	8
y	4	5	6	12	9	5	4

21. If P (A) = 2/5 and P (B) = 3/8 P (A∩B) = 1/20, examine whether A and B are independent?
22. What are the merits and demerits of arithmetic mean?

(8 × 2 = 16 Marks)

SECTION – C

*Short essay type : Answer any **SIX** questions, each not to – exceed one and a half page.*

23. From the following data of the age of Husband and the age of wife, form the two regression equations and calculate the husband's age when the wife's age is 16.

Husband's Age	36	23	27	28	28	29	30	31	33	35
Wife's Age	29	18	20	22	27	21	29	27	29	28

24. For the data given below calculate simple Index number using simple aggregative method:

Commodities	Price (1995)	Price (2000)
A	5	7
B	8	9
C	12	15
D	25	24
E	3	4

25. Explain the time reversal and factor reversal tests of index numbers.
26. Compute quartile measure of dispersion, Inter Quartile range and coefficient of Quartile Deviation for the following values: 23,25,8,10,9,29,45,85,10,16.
27. A card is drawn from a pack of cards. What is the probability that it is (1) a black card (2) a king (3) a queen (4) a spade (5) a spade king (6) a king or a queen?
28. List out the merits and demerits of different averages.
29. Which is the ideal index number and why is it considered ideal?
30. Find the standard deviation and coefficient of variation of the values 10, 12, 80, 70, 60, 100, 0, 4.
31. Explain the relationship between regression and correlation coefficients.

(6 × 4 = 24 Marks)

SECTION – D

*Long essay type : Answer any **TWO** questions, each not exceeding three pages.*

32. Find mean, median and mode for the following data:

Class	5-9	10-14	15-19	20-24	25-29	30-34	35-39
Frequency	8	12	23	12	7	5	3

33. Find Karl Pearson's co -efficient of correlation between the values of X & Y given below. Also find Probable error and interpret.

X	13	14	15	16	17	18	19	20	21
Y	39	41	43	34	37	39	49	47	55

Assume 17 and 43 as mean values for x and y.

34. Using the following data, verify that Marshall Edgeworth Index number is a good approximation to the ideal index number.

Commodity	1999		2002	
	Price	Quantity	Price	Quantity
A	2	74	3	82
B	5	125	4	140
C	7	40	6	33

35. The scores of two batsmen A and B in six innings during a certain match are as follows:

Batsman A	10	12	80	70	60	100	0	4
Batsman B	8	9	7	10	5	9	10	8

Examine which of the two batsmen is more consistent in scoring.

(2 × 15 = 30 Marks)

(Table for Areas under standard normal probability curve is given overleaf)

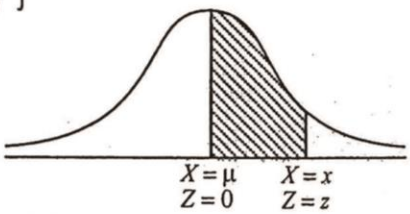
TABLE VI : AREAS UNDER STANDARD NORMAL PROBABILITY CURVE

Normal Probability curve is given by : $f(x) = \frac{1}{\sigma\sqrt{2\pi}} \exp\left\{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2\right\}; -\infty < x < \infty$

and standard normal probability curve is given by :

$$f(z) = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{1}{2}z^2\right), -\infty < z < \infty$$

where $$Z = \frac{X - E(X)}{\sigma_x} = \frac{X-\mu}{\sigma} \sim N(0, 1)$$



The following table gives the shaded area in the diagram, *viz.* $P(0 < Z < z)$ for different values of z.

AREAS UNDER STANDARD NORMAL PROBABILITY CURVE

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998
3.5	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998	0.4998
3.6	0.4998	0.4998	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.7	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.8	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999	0.4999
3.9	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000