F.Y.B.COM. SEM – I (CBCS - 2016 COURSE) : WINTER - 2017

SUBJECT : BUSINESS MATHEMATICS & BUSINESS STATISTICS – I

Day : **Friday** Time : **11.00 AM TO 02.00 PM**
Date : **03/11/2017** **W-2017-0212** Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of logarithmic table and pocket **CALCULATOR** is allowed.

Q.1 A) Choose correct alternative for: **[06]**

i) $\left(\frac{2}{5}\right)^{th}$ of an amount = _____ % of that amount.

a) 50 **b)** 30 **c)** 40 **d)** 20

ii) A person having income of ₹ 1640/- spends ₹ 1230/-, therefore his expenses are _____ % of his income.

a) 70 **b)** 75 **c)** 60 **d)** 50

iii) If an article is sold at 25% profit, then the ratio of cost price to selling price is _____.

a) 1 : 4 **b)** 2 : 5 **c)** 4 : 5 **d)** 5 : 4

iv) Median for : 35, 38, 40, 39, 35, 36, 37.

a) 39 **b)** 36 **c)** 37 **d)** 7

v) Fisher price index number is _____.

a) Geometric mean of base year and current year price.
b) Arithmetic mean of base year and current year price.
c) Geometric mean of Laspeyre's and Paasche's price index number.
d) Arithmetic mean of Laspeyre's and Paasche's price index number.

vi) Given n = 20, $\sum X = 240$, then arithmetic mean is _____.

a) 24 **b)** 12 **c)** 220 **d)** 260

B) Attempt the following: **[06]**

i) Find HCF of 96 and 72.
ii) Define Profit.
iii) If 8, Y and 32 are in continued proportion, then find Y.
iv) Explain class boundaries of a class.
v) Define Base Year.
vi) Compute mode of the following series:
17, 20, 18, 22, 5, 15, 20.

Q.2 Attempt **ANY TWO** of the following: **[12]**

a) Answer the questions using the following frequency distribution of age of 50 citizens:

Age (years)	Below 30	31 – 40	41 – 50	51 – 60	61 – 70	Above 71
Frequency	10	7	5	16	7	5

i) State type of classification.
ii) Identify open end classes and state them.
iii) Find class mark of 3rd class.
iv) State class width of 5th class.
v) State modal class.
vi) Find the number of citizens whose age are less than 50.

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b) Obtain median and mode for following frequency distribution:

Class	140 – 150	150 – 160	160 – 170	170 – 180	180 – 190	190 – 200
Frequency	18	20	11	10	6	4

c) Explain the procedure of drawing: **i)** SRSWR **ii)** SRSWOR.

Q.3 Attempt **ANY THREE** of the following: **[12]**

a) With the help of following data calculate Laspeyre's and Paasches price index number:

Item	Base year		Current year	
	Price	Quantity	Price	Quantity
Oats	15	10	18	15
Wheat	30	50	35	55
Corn	18	8	22	12
Barley	16	10	20	11

b) Draw a histogram for the following frequency distribution:

Class	10 – 30	30 – 50	50 – 70	70 – 90	90 – 110	110 – 130
Frequency	6	16	24	20	10	4

c) The median of following frequency distribution is ₹ 27. Find missing frequencies of data:

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	Total
Frequency	3	--	20	11	--	80

d) The following table gives the frequency distribution of marks in accountancy out of 60. Find the less than cumulative frequency, more than cumulative frequency

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
No. of students	5	25	27	32	6	5

Q.4 Attempt **ANY TWO** of the following: **[12]**

a) A man sold two articles at ₹ 50,920/- each. These were sold at 8% gain and 4% loss respectively. Find the gain or loss percentage in the whole transaction.

b) Find the value of x and y if:
i) $91 : 52 :: 72 : x$ **ii)** $6 : y :: 10 : 30$.

c) Arun, Babu and Chandu enter into a partnership by putting in ₹ 36,000/-, ₹24,000 and ₹ 20,000/- respectively and agreeing to share profits in capital ratio. In case of the net profit of ₹ 20,000, what would be the profit of each partner?

Q.5 Attempt **ANY THREE** of the following: **[12]**

a) Explain the different types of shares.

b) A article is sold for ₹ 42,500/- at a loss of 15%. For how much should it have been sold to earn a profit of 20%?

c) **i)** Two numbers are in the ratio 4:7 and their sum is 1331. Find the numbers.
ii) Find y if, 64, y and 81 are in continued proportion.

d) The printed price of the tin of edible oil is ₹ 72/-. The tin seller earn 12% profit on it, find the cost price.

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