

**F.Y.B.COM. SEM – I (CBCS - 2016 COURSE) : SUMMER - 2018**  
**SUBJECT : BUSINESS MATHEMATICS & BUSINESS STATISTICS – I**

Day : **Monday**  
Date : **23/04/2018**

**S-2018-0242**

Time : **11.00 AM TO 02.00 PM**  
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) L.C.M. of 15 and 45 is \_\_\_\_\_.  
a) 30    b) 40    c) 45    d) 60
- ii) Manish has 3 bananas and Hari has 7 dozen bananas. Therefore ratio of Manish's bananas to that of Hari is \_\_\_\_\_.  
a) 3 : 7    b) 1 : 28    c) 1 : 84    d) 7 : 3
- iii) A man sold 12 pens for the C.P. of 15 pens. Therefore profit is \_\_\_\_\_ %.  
a) 15    b) 50    c) 25    d) 30
- iv) Median for arranged data is:  
a) Mean of the first and last value    c) Least frequent value  
b) Most frequent value    d) Middle most value
- v) If prices are in Rs. and quantities are in Kg. then price index numbers are:  
a) Unit less    b) in Rs.    c) in Kg.    d) in Rs. per Kg.
- vi) If Laspeyre's index number is 121 and Paasche's index number is 169 then Fisher's index number is \_\_\_\_\_.  
a) 143    b) 150    c) 156    d) cannot be determined

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

- i) Find H.C.F. of 12 and 15.
- ii) Find the value of :  $\frac{4}{35} + \frac{9}{56}$ .
- iii) Write a 75% in a fraction.
- iv) Define Sample.
- v) Define Current Year.
- vi) Find the mean of 50 observation if  $\sum(x - 10) = 230$ .

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

- a) Write note on simple random sampling.
- b) The distribution of marks of 100 students is given below:

Class	40 – 60	60 – 80	80 – 100	100 – 120	120 – 140	140 – 160
Frequency	4	10	19	12	4	1

- i) State the type of classification.
- ii) State class width of 3<sup>rd</sup> class.
- iii) Find class mark of 2<sup>nd</sup> class.
- iv) State modal class.
- v) Frequency of 2<sup>nd</sup> class.
- vi) Frequency density of 3<sup>rd</sup> class.

**P.T.O.**

- c) Find median by using formula and also graphically.

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
No. of students	4	8	11	16	12	6	3

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

- a) Draw a histogram for the following frequency distribution:

Income	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	7	8	10	5	6

- b) Find the missing frequency for the following data, if Mean of the distribution is 15.38.

Salary	9 – 11	11 – 13	13 – 15	15 – 17	17 – 19	19 – 21
Frequency	3	7	12	?	8	5

- c) Find mean, median and mode for:  
32, 30, 28, 36, 37, 34, 36, 36.
- d) With the help of following data calculate Laspeyre's and Paasches Price Index Number:

Commodity	Year 2008		Year 2012	
	Price	Quantity	Price	Quantity
A	50	300	56	560
B	100	200	120	240
C	60	240	60	360
D	40	300	36	432

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

- a) A sold car to B at 25% profit, B sold car to C at 10% profit for Rs. 90,200/-. Find the price at which A has purchased the car.
- b) A, B and C are partners in a firm and their respective shares are Rs. 30,000/-, Rs. 45,000/- and Rs. 90,000/- as capitals. If the profit at the end of the year amount to Rs. 99,000/-. Find the share in the profit of each.
- c) i) The ages of father and his two sons are in continued proportion. The father is 45 years old and his younger son is 5 years old. Find the age of elder son.  
ii) Find the fourth proportional to 9, 18 and 15.

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

- a) The population of city according to 2000 census was 1,84,500 and it raise to Rs. 2,11,200 in 2010. Find the percentage increase in the population.
- b) The sum of present ages of 3 persons is 66 years. Five years ago, there ages were in the ratio 4:6:7. Find their present ages.
- c) Explain the term, Equity shares and Bonus shares.
- d) The price Rs. 40/- of an article was increased by 10%. AS a result, the consumption of the articles decreased by 30%. What is the change percent in the original income from the sale of articles?