S. B. B. Alias APPASAHEB JEDHE ARTS, COMMERCE & SCIENCE COLLEGE, PUNE 02.

TERM END EXAM. 2013-2014

F.Y.B.Com. **SUB - MATHEMATICS AND STATISTICS** **Time - 2 hrs.**

Marks - 60

Q.1 Attempt any three of the following **12**

a) Explain the various types of Preference Shares.

b) Find the simple interest on ₹ 38,000 at 10% p.a. for 2 years.

c) State true or false of the following

i) N = (1,2,3,4.....) is called as the set of natural numbers.

ii) $(2x3)^4 = 6^4$

iii) The L.C.M. of 20 & 25 is 100.

iv) $\frac{1}{3} + \frac{1}{5} = \frac{2}{15}$

d) Find the amount, if ₹ 40,000 invested for 4 years at the rate 12% p.a. compound interest.

e) A share was purchased for ₹ 350. The company declared a dividend of 50%. What was the return on investment, if the face value was ₹ 100.

Q.2 Attempt any three of the following **12**

a) Which is better investment, 24% at ₹ 160 or 15% at ₹ 250
(Given the face value = ₹ 100)

b) i) Find Highest Common factor (H.C.F) & Lowest Common Multiple (L.C.M.) of the following numbers 32 & 96.

ii) The salary of A & B is in the ratio of 3:4. If the total salary is ₹ 14,000. What is the salary of B.

c) What sum will amounts to ₹ 20,000 in 2 years at 8% p.a. compound interest ?

d) Find EMI on a loan of ₹ 1,00,000 to be repaid in 4 year at 12% p.a. on outstanding amount at the beginning of each month. [Given $(1.01)^{48} = 1.6122$]

e) At what rate of simple interest will the amount of ₹ 10,000 become ₹ 15,000 in 4 years ?

Q.3 Attempt any three of the following **12**

a) Explain the difference between Simple interest & Compound interest.

b) Mr. X holds 30 equity shares of ₹ 10 each & 20 preference shares of ₹ 10 each. Company declares 20% dividend on equity shares & 10% dividend on preference shares. Find the dividend received by him.

c) A Television set worth ₹ 20,000 is purchased on installment basis under equal 20 monthly installments including interest at 8% p.a. Find EMI by following Flat Rate Interest System.

d) i) One person gets 5% commission on sale made by him if his sale is ₹ 17,400. How much commission he will get.

ii) The partners are carrying business by contributing capital of ₹ 2000, 3000 & 5000 respectively. If they earn profit of ₹ 7600. What is the share of each partner.

e) Find the compound interest on ₹ 40,000 for 3 years at 15% p.a.

Q.4 Attempt any three of the following **12**

a) Explain the stratified sampling method.

b) Explain the importance of Mathematics & Statistics in the field of Economics & Industry.

c) Draw a histogram and find the value of mode graphically

Weekly salary	1000-1500	1500-2000	2000-1500	1500-2000	2000-2500
No of employee	12	15	28	20	5

d) Calculate Mean for the following data

Rent per room	100	110	120	130	140
No of Students	5	8	12	10	5

e) Calculate Median for the following data

Marks	0-5	5-10	10-15	15-20	20-25
No. of Students	4	8	16	12	5

Q.5 Attempt any three of the following **12**

a) Define

i) Statistics ii) Population iii) Sample iv) Data

b) From the following data complete arithmetic Mean for the following.

Weight in kg	30-40	40-50	50-60	60-70	70-80
No. of students	8	12	20	15	5

c) From the following frequency distribution answer the questions.

Weight in kg	10-19	20-29	30-39	40-49	50-59
No. of students	2	7	13	18	10

Find :- i) Class boundaries of 2nd class ii) Class width of 2nd class

iii) Mid value of 3rd class iv) Frequency of 4th class

v) Type of classification.

d) For the following information prepare less than cumulative frequency distribution and greater than cumulative frequency distribution

C. I.	20-40	40-60	60-80	80-100	100-120
f	15	20	35	15	10

e) Draw less than Ogive curve for the following data

Marks obtained	0-9	10-19	20-29	30-39	40-49
No. of Students	6	14	20	18	2

* * *