QUESTION PAPERS

BRANCH: Bachelor of Commerce (Accounting & Finance)	SEM: I
	JAN-2022

Sr. No.	Subject	Available
1.	Quantitative Methods	
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SOMAIYA VIDYAVIHAR UNIVERSITY

Semester: January 2022 **Examination: ESE Examination**		
Programme code:02/03/04 **Programme: BAF/BAF Hons/BFM**	**Class:** **FYBFM**	**Semester: I**
Name of the Constituent College: **S K Somaiya College**	**Name of the department/Section/Center:** **Commerce and Business Studies**	
Course Code:	**Name of the Course: Quantitative Methods**	
Duration: 2 hours	**Maximum Marks: 60**	
Instructions: 1) All questions are compulsory. 2) Figures to the right indicate full marks		

Question No.		Max. Marks
Q1 (a)	**Multiple choice Question:** 1) Any periodical payment of a fixed amount made at a regular interval is i) Installment iii) Future Value ii) Annuity iv) Fee 2) If the mean of frequency distribution is 100 & the coefficient of variation is 35% then what is the value of the variance? i) 35 iii) 1225 ii) 0.35 iv) 350 iii) 3) Consider the following data 2,7,7,9,10,12,15,17,20,22. Which of the following is median of the data. i) 10 iii) 12 ii) 7 iv) 11l 4) In a Binomial distribution the mean is 15 & variance is 10 then parameter n is i) 28 iii) 16 ii) 45 iv) 25 5) Which of the following is variance of discrete uniform distribution? i) $(n+1)/2$ iii) $(n^2-1)/12$ ii) $(n^2+1)/12$ iv) $(n-1)/6$	**[05 M]**
Q1 (b)	**Define the following Terms:** 1) Effective annual Rate. **2)** Median for the continuous frequency distribution **3)** Lognormal Distribution. 4) Conditional probability. **5)** Geometric mean.	**[05 M]**

Q1 (c)	**Fill in the Blanks:** **1.** The class interval having cumulative frequency a least greater than or equal to N/2 is known as .... **2.** If the frequency is divided into ten parts, then each part is called ... **3.** Each subset of a sample space is called as ... **4.** The formula for correlation coefficient = ... **5.** A sequence of periodic payments regularly over a specified period of time is known as ...	**[05 M]**
Q2 (a)	1) A bag contains 4 white & 7 black balls. Find the expectation of a person who is allowed to draw 2 balls from the bag & who is to receive 02 Rs. for each black ball & 02 Rs. For each white ball. 2) Two independent variables x & y have mean 5 & 10 with variance 3 & 11 respectively obtain correlation coefficient between u & v Where; $u = 3x+y$ & $v = 3x-y$ **OR** 1) A die is thrown twice. Let A be the event, first die shows 5 & B be the event second die shows 5. Find P (A ∪ B). 2) Rupees 5000 is invested in a term deposit scheme that fetches interest 6% per annum compounded quarterly. What will be the interest after one year? What is effective rate of interest? 3) State PDF & Variance of Binomial Distribution.	**[07 M]** **[08 M]** **[07 M]** **[06 M]** **[02 M]**
Q3 (a)	1) The length of similar components produced by a company are approximated by a normal distribution model with a mean of 5cm & standard deviation of 0.02cm. If component is chosen of random. i) What is probability that the length of this component is between 4.98 &5.02 cm? $P(0 < Z < 1) = 0.3413$ ii) What is the probability that the length of this component is between 4.96 & 5.04 cm? $P(0 < Z < 2) = 0.4772$ 2) Calculate A.M. & median of following distribution of 100 Person by age. 3) Give 02 real life situations of binomial distribution. **OR** 1) Derive mean & variance of binomial distribution.	**[06 M]** **[07 M]** **[02 M]** **[08 M]**

Age Last Birthday	15-19	20-24	24-29	30-34	35-39
Number	4	20	38	24	10

	2) A husband & wife appears in an interview for two vacancies in some post. The probability of husband's selection is 1/5 & that of wife selection is 1/7. What is the probability that. i) Both of them will be selected. ii) Only one of them will be selected.	[07 M]
Q4 (a)	1) Calculate mean deviation about median for the following data.	[08 M]

No of trees planted	5-25	25-45	45-65	65-85	85-105
No of schools (P)	12	8	14	20	6

2) If X is Binomially distributed with 6 trails & a probability of success equal to ¼ at each attempt, what is the probability of exactly 04 successes? Also fine probability of at least 04 successes? [07 M]

OR

1) Find mode & median of the following data. [06 M]

Marks	0-10	10-20	20-30	30-40	40-50
No of students	8	15	22	18	7

2) Two dies are thrown simultaneously & sum of the numbers obtained is found to be 7. What is the probability that the number 3 has appeared at least once? [07 M]

3) Define the term opportunity cost. Give one real life example [02 M]