

Bachelor of Commerce with Accountancy, Finance and Insurance (BAFI)

Examination: April 2026

Day & Date	Semester	Subject Name	Time	Code	Max. Marks
Saturday 11/04/2026	VI	Quantitative Methods for Business	11.00 am to 1.30 pm	641319	75

Instructions:

- 1. Question No. 1 is Compulsory**
 - 2. Attempt any 4 out of remaining**
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Q.1. Attempt the following **15**

- a) Explain types of error **2**
- b) Advantages of Survey **2**
- c) Explain network analysis **2**
- d) Define Hypothesis & its Types **2**
- e) Define Risk **2**
- f) Explain PERT CPM **2**
- g) Primary data collection sources **2**
- h) Write down applications of chi-square test **1**

Q.2. a) A Company director is concerned that his company's share may be unevenly distributed throughout the country, in a survey in which sample of 200 customers are selected from four zones and are tabulated as under: **09**

	Zones				
	I	II	III	IV	
Purchase the brand	80	110	90	100	380
Not purchase the brand	120	90	110	100	420
	200	200	200	200	800

At 5% significance level, use χ^2 to determine whether the company share is same across the four zones.

b) Distinguish between primary data and secondary data **06**

- Q.3.** a) Given the following pay-off table, obtain the optimum decision using (i) **09**
 maximax criterion (ii) maximin criterion, (iii) minimax criterion

Pay-off table				
Course of Action	State of Nature			
	S ₁	S ₂	S ₃	S ₄
A ₁	65	45	30	85
A ₂	75	25	105	40
A ₃	70	70	75	55
A ₄	80	80	40	60

- b) For the following conditional pay-off table, choose best decision using EMv & **06**
 EOL criterion

Course of Action	State of Nature			
	S ₁	S ₂	S ₃	S ₄
A ₁	100	300	150	400
A ₂	0	50	30	-10
A ₃	120	160	200	140
A ₄	-100	0	500	300
Probability	0.3	0.2	0.4	0.1

- Q.4.** A R & D project has a list of tasks to be performed whose time estimates are given as **15**
 follows:

Activity	Name	T _o	t _m	T _p
1-2	A	4	6	8
1-3	B	2	3	10
1-4	C	6	8	16
2-4	D	1	2	3
3-4	E	6	7	8
3-5	F	6	7	14
4-6	G	3	5	7
4-7	H	4	11	12
5-7	I	2	4	6
6-7	J	2	9	10

- i) Construct PERT Network
 ii) Find critical path

- Q.5.** a) Solve the following linear programming by graphical method. **09**

Maximize $Z = 5x + 3y$

Subject to,

$$2x + y \leq 9$$

$$3x + 2y \leq 16$$

$$x \geq 0, y \geq 0$$

b) Formulate LPP which will maximize the profit

06

	Toy Type - A	Toy Type – B	Max. Available Time
Machine – I	03	02	08
Machine – II	02	05	08
Profit	14	12	

- Q.6** a) The EMV are 31, 40.5, 26.1, 28.5; Choose 4, with maximum value of 31. A firm has developed a new product X, they can either test market or abandon the project. The details are set out below. **15**

Test market cost 50,000, likely outcomes are favourable ($P=0.7$) or failure ($P=0.3$). If favourable, they could either abandon or produce it when demand anticipated to be

Low $P=0.25$ Profit ₹ 1,00,000

Medium $P=0.6$ Profit ₹ 1,50,000

High $P=0.15$ Profit ₹ 4,50,000

If the test market indicates failure, the project would be abandoned. Abandonment at any stage results in a gain of ₹ 30,000 from machinery used.

- (i) Draw decision tree showing the nodes of possibilities.
(ii) Evaluate the decision tree.

Q7. Attempt any three

15

- a) Define Risk. Explain type of Risks in Detail
b) Define Hypothesis. Write down the steps involved in testing of Hypothesis.
c) Explain Linear Programming Problem
d) Explain use of Chi-Square Test in details.