May - June 2023 BBF

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1326 **F**

Unique Paper Code : 2922101202

Name of the Paper : Financial Institutions and Markets

Name of the Course : **B.A. (Hons.) Business Economics**

Semester : II

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. This paper contains **Eight** questions. Attempt any **Six** questions.
3. **All** questions carry equal marks.
4. Use of a simple calculator and time value tables is allowed.

P.T.O.

1. A bank provides the following terms and conditions to a prospective home loan borrower :

(a) Amount of a loan: Rs. 10, 00,000.

(b) Duration of loan: 8 years and loan installments are to be paid on an annual basis.

(c) The terms of the interest are: Fixed Rate of Interest: 6% per annum **OR** Floating Rate of Interest: 5% per annum.

(d) After four years, the floating rate is expected to rise to 6 % per annum and the corresponding fixed rate shall be 8 %. Also, there is a high probability of a further rise in the floating rate in subsequent years. At this time if the borrower decides to switch from floating to fixed, he will have to bear switching cost of 2% of the outstanding amount of loan. Assuming that the interest is compounded annually, determine whether the home loan borrower should opt for

(i) **Option-1:** Fixed rate or

(ii) **Option 2:** Floating rate of interest initially and then switching to fixed rate of interest after four years due to an expectation of further hike in the floating interest rate. (15)

2. "NBFCs have been instrumental in promoting financial inclusion in India". Explain the given statement in light of the role played by NBFCs in the Indian financial landscape. Also explain how NBFCs are different from commercial banks. (15)

3. What is meant by listing of Securities. Stating the categories of listing (of securities), explain the process/provisions to be undertaken by a company to list its shares, with respect to SCRA and SEBI regulations. (15)

4. ABC Company Ltd intends to make a public issue of 10,00,000 equity shares of Rs. 130 each at par (Cut off price), payable fully on application as well as

allotment (assuming cut off price has been decided through book building process). The total number of applications of 20,00,000 shares are received from different categories of investors. The company decides to allot additional 15% shares using 'Green shoe Option' (GSO). The expenses incurred by stabilising agent were Rs. 40,000. Given the above information, you are required to analyse the post listing price (market price) of such shares under three different situations using the table given below

(a) **Situation I:** Post listing price of Rs. 110 when 1,50,000 shares are bought from the market and credited in GSO Demat Account.

(b) **Situation II:** Post listing price of Rs. 150 when no shares are bought from the market to be credited in GSO Demat Account.

(c) **Situation III:** Post listing price of Rs. 130 when 1,00,000 shares are bought from the market and credited in GSO Demat Account.

S.No	GSO details.	Situation- I	Situation-II	Situation-III
1	Net Offer to the public made by ABC Company Limited (No of Shares)			
2.	Total number of applications received			
3	IPO price (Listing Price)			
4.	Total amount of IPO size			
5.	Shares lent by promoters to Stabilising agent			
6.	Amount in GSO bank account from IPO proceeds			
7	Post Listing Market Price			
8.	Shares credited to GSO Demat Account.			

9.	Amount used from GSO Bank Account for market purchases.			
10.	Balance amount in GSO Bank Account.			
11.	Number of new shares allotted by the company to GSO Demat Account.			
12.	Number of shares return to promoters from GSO Demat Account.			
13.	Amount remitted to company on account of fresh shares allotted.			
14.	Stabilising expense.			
15.	Balance amount in GSO bank account to be transferred to 'Investor Protection & Education fund'.			

(15)

5. Explain the concept of Rolling Settlement. Further explain the 'Depository System' with respect to clearing and settlement in secondary market in India. (15)

6. Explain Full Float and Free Float Market Capitalization Methodologies for calculating an index.

Assume DJIA index includes only three securities X, Y and Z. The prices of the securities on 1st January 2024 are Rs. 80, Y Rs. 40 and Z Rs. 30. Calculate the DJIA index.

Further assuming that the security X goes for a 4:1 split on 1st January 2024, calculate the Index on 30th April 2024, if the prices of the three securities on 30th April 2024 are Rs. 25, Rs. 45 and Rs. 35 respectively. (15)

7. The Government needs funds to carry out its welfare functions. Discuss the participants, process of issue and importance of Government Dated Securities in India.

Further, Calculate the accrued interest on the trading day for a 12.50% Government Security (Face Value: Rs. 1000) maturing on 19th July 2024, the day of trade being 15th April 2024. The YTM on the trading day is 7.7% p.a. and the last interest was paid on 19th January 2024, interest being paid on a half yearly basis. (15)

P.T.O.

8. Write Short notes on any **three** of the following :

(a) Call Money Market

(b) Circuit Breakers

(c) NPAs in Banking Sector

(d) Book Building Method Vs Fixed Price Method

(5,5,5)

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1326 **F**

Unique Paper Code : 2922101202

Name of the Paper : Financial Institutions and Markets

Name of the Course : **B.A. (Hons.) Business Economics**

Semester : II

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

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(a) Call Money Market

(b) Circuit Breakers

(c) NPAs in Banking Sector

(d) Book Building Method Vs Fixed Price Method (5,5,5)

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6804**
Unique Paper Code	:	12481201
Name of the Paper	:	Macroeconomics & Applications- II
Name of the Course	:	**B.A. (Hons.) Business Economic (LOCF), 2023**
Semester	:	II
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt all parts of a particular question together.
3. Attempt **any FIVE** questions.

1. What is market failure? Elaborately explain various reasons that lead to market failure. (5, 10)

2. a) What do you understand by prisoners' dilemma? (5)

   b) Given:

		Prisoner B	
		confess	Do not confess
Prisoner A	confess	8,8	1,15
	Do not confess	15,1	3,3

P.T.O.

Solve:

i) What is dominant strategy? Find if there exists a dominant strategy for the above question?

ii) Solve if both the prisoners are risk- averse.

(5, 5)

3. a) Explain the price rigidity with the help of kinked demand curve. (5)

b) In a duopoly market two firms facing the linear demand curve:

P=900-Q

Where $MC_1 = MC_2 = 300$

Find the equilibrium for the above condition under Cournot's equilibrium and under Stackleberg equilibrium.

(5, 5)

4. What is Pareto efficiency? Show that the optimal output of a perfectly discriminating monopolist is Pareto efficient, use suitable diagrams. (5, 10)

5. Explain and prove the Walrus law. Does Walrus law holds true for all the price set or only for equilibrium price set? (10, 5)

6. What is Arrow's impossibility theorem? Explain the concept of fair allocation using suitable diagram. (7, 8)

7. How is demand for labor determined under perfect competition? Is it easier for an individual to seek raise or for labor union? Explain with suitable diagram. (8,7)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1296 **F**

Unique Paper Code : 2922101201

Name of the Paper : MACROECONOMICS – I

Name of the Course : **B.A. (Honours) Business Economics**

Semester : II

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Six** questions from all.
3. Question number **1** is mandatory to attempt.
4. Attempt at least minimum **two** questions including mandatory question from each section.
5. **All** questions carry equal marks.
6. Illustrate your answer with suitable diagrams, wherever required.

P.T.O.

SECTION – A

1. Consider the following statement, state whether true or false, give arguments in support of your answer **(any three)**

   (a) Phillips curve shows direct relationship between inflation and unemployment.

   (b) The monetary policy is quite effective to alter level of output and interest rate under the conditions of liquidity trap.

   (c) The effectiveness of money multiplier is inversely associated with credit to deposit ratio.

   (d) If demand for money is insensitive to interest rates, LM curve is nearly vertical. (5×3=15)

2. Describe the Keynesian theory of demand for money. Do you think that interest rate does not affect transaction demand for money according to Keynesian theory of liquidity preferences. Give reasons in support of your answer. (10+5)

3. What is Keynesian theory of income determination? How it differ from classical theory of income determination? If marginal propensity- to consume of an economy increases over time, how it impact equilibrium level of income. Explain with suitable example. (5+5+5)

4. What are the primary and secondary- functions of money in an open economy. Differentiate between quantity theory- of money and loanable fund theory- of interest rate determination. (10+5)

SECTION – B

5. A hypothetical economy is characterised by following functions of an IS-LM Model :

   $C = 200 + 0.25Y_D$

   $I = 150 + 0.25Y - 1000i$

   $G = 250$

   $T = 200$

   $(M / P)_d = 2Y - 8000i$

   $M / P = 1600$

   (a) Derive the IS and LM relations and find out an equilibrium level of income and interest rate.

   (b) If central bank change the monetary base and the monetary expansion takes the form of an increase in the money supply from original level of 1600 in the model to 1840. What is the effect of monetary expansion on the equilibrium values of Output, Interest Rate, Consumption and Investment in the model?

   (c) What is the effect of a Fiscal Expansion will have on the equilibrium values of Y, i, C and I when an increase in Government spending – G rises to 400

from the original level of government spending of 250 assuming that money supply is back at its original level of 1600? (5+5+5)

6. Explain the determination of an equilibrium level of interest rate and income in a closed economy under following assumption

- Economy is operating under flexible exchange rate
- Money market and goods market both are interest elastic.
- Money market is more interest elastic than goods market.

How do a policy mix (selling of bond to public in OMO by central bank and an increase in government spending) affects an equilibrium level of income and interest rate. Explain. (10+5)

7. "Inflation is an outcome of both supply and demand side factors." Discuss. How do monetarist view of inflation differ form traditional theory of inflation. Explain. (10+5)

8. Write short notes on any **three** :
   (a) Origin of macroeconomics
   (b) Balance of payments
   (c) Consumption function
   (d) Liquidity trap (5×3=15)

(500)

[This question paper contains 3 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6804A**
Unique Paper Code	:	12481202
Name of the Paper	:	Mathematics for Business Economics
Name of the Course	:	**B.A. (Honours) Business Economics (LOCF), 2023**
Semester	:	II
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer all questions. Choice is available within each question.
3. Use of simple calculators is permitted.

1. Attempt any *five* parts from parts (a) to (f) in this question. [3 x 5]

   (a) What are the values of x that satisfy the inequality $\frac{10}{x-5} > 3$?

   (b) Find the limit of the function: $\lim_{x\to 0} \frac{x^3-1}{x^2}$

   (c) Find all possible integer roots of the equation $x^3 - x^2 - 25x + 25 = 0$

   (d) Find the domain and the range $f(x) = \frac{2x-1}{x^2-x}$

   (e) Find all asymptotes to the curve represented by the equation: $y = \frac{x^3-7x^2+16x-12}{x^2-4x+3}$.

   (f) A investment that costs Rs. 200,000 at present is expected to provide a return of Rs. 120,000 after one year and Rs. 130,000 after two years. What is the internal rate of return for the investment? Is this investment worthwhile if the market rate of interest is 10%?

P.T.O.

2. Attempt any *four* parts from parts (a) to (e) in this question. [5 x 4]

(a) A firm assumes an average cost function $AC = 10 + \frac{x}{25}$, and its demand function is given by $x = 200 - 10p$, where x is the monthly output and p is the price. Find the profit maximising level of output. Also find the firm's marginal revenue function.

(b) The short run cost function is given by $C = 0.001x^3 - 0.3x^2 + 30x + 42$. Determine the values of x where this cost function is concave from below and find the point(s) of inflection.

(c) If the population of a country grows over time according to the function $P(t)$ and the national income grows according to the function $Y(t)$. Derive the expression for the proportional rate of change of per capita national income $Z(t) = Y(t)/P(t)$ in terms of the proportional rates of change of Y and P.

(d) Determine the value of k so that the function is continuous at $x = 1$.

$$f(x) = \begin{cases} \dfrac{x^2 - 3x + 2}{x - 1}, & x \neq 0 \\ k, & x = 1 \end{cases}$$

(e) Use the limits and derivatives of the function $y = x^2e^{-x}$ to describe the curve and sketch its graph.

3. Attempt any *three* parts from the parts (a) to (d) in this question. [5 x 3]

(a) Prove that if A is a symmetric matrix or a skew symmetric matrix, AA is a symmetric matrix.

(b) Define linear independence and check the set S of three vectors for linear independence, where $S = \{(2, 4, 1), (3, 3, 2), (4, 1, 4)\}$

(c) For the system of three equations:
$x + y + z = 6,\ x + 2y + 3z = 10,\ x + 2y + \alpha z = \beta$
Find the values of α and β so that the system has (i) a unique solution, (ii) no solutions.

(d) The demand and supply functions of two related goods are given by
$Qd_1 = 30 - 8P_1 + 4P_2$ and $Qs_1 = -60 + 6P_1$
$Qd_2 = 200 + 4P_1 - 4P_2$ and $Qs_2 = -40 + 6P_2$
Find the equilibrium prices and quantities.

4. Attempt any *five* parts from the parts (a) to (f) in this question. [5 x 5]

(a) (i) Define a homogeneous functions of two variables.

(ii) Examine if the following function is homogeneous and find its degree of homogeneity $h(x, y) = \frac{\sqrt{x}+\sqrt{y}}{x+y}$

(b) Find dz/dt when $z = F(x, y) = xe^{2y}$ with $x = \sqrt{t}$ and $y = \ln t$

(c) (i) Specify the domain and provide a rough sketch of it for the function $f(x, y) = \ln(9 - x^2 - 9y^2)$.

(ii) Provide a rough sketch of the level curve to the function in (i) above at the height 4.

(d) Find all stationary points of the function

$f(x, y) = x^3 + y^2 - 2xy - 2x^2 + x - y + 4$

Classify the stationary points as maxima, minima and saddle points.

(e) A firm produces two different kinds A and B of a commodity. The daily cost of producing x units of A and y units of B is $C(x, y) = 2x^2 - 4xy + 4y^2 - 40x - 20y + 514$. Suppose that the firm sells all its output at a price per unit of Rs. 24 for A and Rs. 12 for B. Find the daily production levels x and y that maximize profit.

(f) The utility function for a consumer is given by $U = x^2y$ where x and y are the quantities of x and y consumed by the consumer. Find equilibrium bundle if price of x is Rs.1 and that of y is Rs. 2 and the income of the consumer is Rs. 600 and also investigate the second order conditions.

May - June 2023

[This question paper contains 12 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1348 **F**

Unique Paper Code : 2922101203

Name of the Paper : Statistics for Business Economics – I

Name of the Course : **B.A. (Hons.) Business Economics**

Semester : II

Duration : 3 Hour Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **all** questions.
3. Choice is available within each question.
4. Use of simple calculator is allowed.
5. Required statistical tables are attached with this paper.

1. Attempt any **three** of the following : (3×10=30)

(a) The wheat yield (X in quintals per acre) for a farm in Punjab for a sample of 8 years was

50, 56, 47, 27, 52, 43, 46 and 55

(i) Compute the sample mean, the sample standard deviation and the 10% trimmed mean.

(ii) Is the sample mean an appropriate measure of location of the data? Why or why not?

P.T.O.

(iii) A new hybrid seed promises a yield given by $y_i = 1.2x_i - 8$. Find the mean, 10% trimmed mean and standard deviation of yield for this new variety.

(b) The distribution of weight in (kgs) of students of a class was as follows

Weight (in kgs)	Number of students
35-40	4
40-50	12
50-55	10
55-60	6
60-70	14
70-85	4

(i) Trace the above information in a histogram. Comment on the nature of distribution

(ii) What proportion of students weigh less than 52 kgs? What percentage weighs between 42 to 65 kgs?

(c) (i) You are given position of a factory before and after the settlement of the industrial dispute. Comment on the gain and loss to the workers and that of the management.

Variables	Before	After
No. of Workers	2500	2700
Mean Wage	45	48
Median wage	50	47
Standard deviation	12	10

(ii) From a moderately skewed distribution of retail prices for men's shirts, it is found that the mean price is Rs. 200 and the median price is Rs. 170. If the coefficient of variation is 20%, find the Pearsonian coefficient of skewness of the distribution

(d) A sample of 20 glass bottles of a particular type was selected and the internal pressure strength of each bottle was determined. Consider the following partial sample information :

median = 202.2	lower fourth = 196	upper fourth = 216.8
Three smallest observations	125.8 188.1 193.7	
Three largest observations	221.3 230.5 250.2	

(i) Find the value of the fourth spread f_s.

(ii) By how much can the smallest sample observation, be increased without affecting the value of the sample median?

(iii) How large or small does an observation have to be to qualify as an outlier? An extreme outlier? Are there any outliers in the given sample? Classify the outliers as moderate or extreme.

Construct a boxplot that shows outliers, and comment on any interesting features.

2. Attempt any **four** of the following : (4×10=40)

(a) (i) Samples of a cast aluminum part are classified on the basis of surface finish (in microinches) and length measurements. The results of 100 parts are summarized as :

Surface Finish		Length	
		Excellent	Good
	Excellent	80	2
	Good	10	8

Let A denote the event that a sample has excellent surface finish, and let B denote the event that a sample has excellent length. Determine :

(a) P(A)

(b) P(B)

(c) P(A/B)

(d) If the selected part has excellent surface finish, what is the probability that the length is excellent?

(e) If the selected part has good length, what is the probability that the surface finish is excellent?

(ii) Let A denote the event that the next request for assistance from a statistical software consultant relates to the SPSS package, and let B be the event that the next request is for help with SAS. Suppose that $P(A) = 0.3$ and $P(B) = 0.5$.

(a) Why is it not the case that $P(A) + P(B) = 1$?

(b) Calculate $P(A')$.

(c) Calculate $P(A \cup B)$

(d) Calculate $P(A' \cap B')$

(b) (i) Classify the following random variables as discrete or continuous :

(a) X : the number of automobile accidents per year in Patna.

(b) Y : the amount of milk produced yearly by a particular cow.

(c) Z : the number of eggs laid each month by a hen.

(d) Q : the weight of grain produced per acre in Punjab

(ii) The probability density function (pdf) of a continuous random variable X is $f(x) = a(1 - x^2)$, $0 \le x \le 1$. Find the value of a for f(x) to be a valid pdf.

(c) The joint probability density function of two random variables X and Y is given by :

$$f(x,y)=\begin{cases}\frac{2}{5}(2x-3y), & 0\le x\le 1,\ 0\le y\le 1\\ 0, & \text{elsewhere}\end{cases}$$

(i) Verify that this is a valid density function.

(ii) Find $P\left(0<X<\frac{1}{2},\ \frac{1}{2}<Y<\frac{1}{4}\right)$.

(iii) Find the marginal probability density functions of X and Y.

(iv) Are X and Y independent?

(d) (i) If X is the random variable whose cdf is given by F(x) :

$$F(x)=\begin{cases}0 & x<1\\ \frac{1}{2} & 1\le x<2\\ \frac{3}{4} & 2\le x<3\\ \frac{7}{8} & 3\le x<4\\ 1 & x\ge 4\end{cases}$$

Find (i) $P(X\le 1)$, (ii) $P(1<X\le 3)$, (iii) $P(2<X\le 4)$ (i) $P(X=2)$

(ii) Given the values of the joint probability distribution of X and Y shown in the table :

		X		
Y		0	1	2
	0	1/6	1/3	1/12
	1	2/9	1/6	
	2	1/36		

Calculate

(a) the marginal distribution of X and Y.

(b) $P(X + Y = 1)$

(c) the conditional distribution of X given $Y = 1$.

(d) Are X and Y independent?

(e) (i) In an exam taken by 500 students the marks are normally distributed with mean 40 and standard deviation 10. How many will fail if 30 is fixed as minimum? If 50 students got distinction what is the cut off distinction?

(ii) Suppose that the number of drivers who travel between a particular origin and destination during a designated time period has a Poisson distribution with parameter $\mu = 20$. What is the probability that the number of drivers will

(a) Be at most 10?

(b) Exceed 20?

(c) Be between 10 and 20, inclusive? Be strictly between 10 and 20?

3. Attempt any **two** questions : (2×5=10)

(a) (i) The rank correlation coefficient between mathematical methods and statistical methods marks of 10 students was calculated as 0.5. It was discovered later that the difference in ranks in the two subjects was wrongly taken as 3 instead of 7. Find the correct value of thee coefficient.

(ii) Find the coefficient of correlation from the following data and interpret its value :

X	158	296	87	110	436
Y	349	510	301	322	550

(b) (i) Given the following aptitude and I.Q. scores for a group of students, find the coefficient of rank correlation :

Aptitude Score	57	58	59	59	60	61	60	64
I.Q. Score	97	108	95	106	120	126	113	110

(ii) Two independent variables x and y have means 5 and 10 and variances 4 and 9 respectively. Obtain the correlation coefficient between $k = 3x + 4y$ and $h = 3x - y$.

(c) (i) Draw a scatter diagram of the following data and indicate whether the correlation between the variables is positive or negative.

Height (inches)	62	72	70	60	67	70	64	65	60	70
Weight (lbs)	50	65	63	52	56	60	59	58	54	65

(ii) The covariance of two perfectly correlated variables X and Y is 96. Determine ox and ay if it is known that variance of X and that of Y is in the ratio of 4 : 9.

4. Attempt any **two** of the following : (2×5=10)

(a) (i) A fresh graduate is offered jobs by a recruiting company in cities A and B. He is offered a monthly salary of ₹40000 in A and ₹36000 in B. Given that the consumer price index is 180 in A and 150 in B. Which job offer should he accept? How much should be the minimum salary at which he would accept the other job offer?

(ii) Assume that an index number is 100 in 2011, it rises 3% in 2012, falls 1% in 2013, rises 2% in 2014 and rises 3% in 2015. The rise and fall are with respect to the previous year. Calculate the index of the five years using 2015 as the base year.

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(b) (i) The following tables give the annual income of a person and the general price index for the period 2011 to 2014. Prepare the index number to show real income of a person.

Year	Annual Income in Rs.	Price Index Number
2011	36000	100
2012	42000	120
2013	50000	145
2014	55000	160

(ii) The consumer price index for a group of worker was 250 in 2014 with base year 2000.

(a) Compute the purchasing power of a Rupee in 2014 as compared to 2000.

(b) At what value of Consumer price index would the purchasing power of a Rupee be 25 paisa.

(c) (i) Calculate the CPI from the following data :

Items	Group Price Index	Average Expenditure per month
Fuel	130	61
Rent	150	75
Clothing	125	20
Cereals	140	41
Misc.	110	25

(ii) Comment on the following statements :

(a) Circular test fails for the Laspeyre's and Paasche's index numbers.

(b) Fisher Ideal Index lies between Laspeyres and Paasches index numbers.

A-4

Table A.1 Cumulative Binomial Probabilities *(cont.)*

e. $n = 25$

$$B(x; n, p) = \sum_{y=0}^{x} b(y; n, p)$$

	p														
	0.01	**0.05**	**0.10**	**0.20**	**0.25**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.75**	**0.80**	**0.90**	**0.95**	**0.99**
0	.778	.277	.072	.004	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1	.974	.642	.271	.027	.007	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.998	.873	.537	.098	.032	.009	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	1.000	.966	.764	.234	.096	.033	.002	.000	.000	.000	.000	.000	.000	.000	.000
4	1.000	.993	.902	.421	.214	.090	.009	.000	.000	.000	.000	.000	.000	.000	.000
5	1.000	.999	.967	.617	.378	.193	.029	.002	.000	.000	.000	.000	.000	.000	.000
6	1.000	1.000	.991	.780	.561	.341	.074	.007	.000	.000	.000	.000	.000	.000	.000
7	1.000	1.000	.998	.891	.727	.512	.154	.022	.001	.000	.000	.000	.000	.000	.000
8	1.000	1.000	1.000	.953	.851	.677	.274	.054	.004	.000	.000	.000	.000	.000	.000
9	1.000	1.000	1.000	.983	.929	.811	.425	.115	.013	.000	.000	.000	.000	.000	.000
10	1.000	1.000	1.000	.994	.970	.902	.586	.212	.034	.002	.000	.000	.000	.000	.000
11	1.000	1.000	1.000	.998	.980	.956	.732	.345	.078	.006	.001	.000	.000	.000	.000
12	1.000	1.000	1.000	1.000	.997	.983	.846	.500	.154	.017	.003	.000	.000	.000	.000
13	1.000	1.000	1.000	1.000	.999	.994	.922	.655	.268	.044	.020	.002	.000	.000	.000
14	1.000	1.000	1.000	1.000	1.000	.998	.966	.788	.414	.098	.030	.006	.000	.000	.000
15	1.000	1.000	1.000	1.000	1.000	1.000	.987	.885	.575	.189	.071	.017	.000	.000	.000
16	1.000	1.000	1.000	1.000	1.000	1.000	.996	.946	.726	.323	.149	.047	.000	.000	.000
17	1.000	1.000	1.000	1.000	1.000	1.000	.999	.978	.846	.488	.273	.109	.002	.000	.000
18	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.993	.926	.659	.439	.220	.009	.000	.000
19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.998	.971	.807	.622	.383	.033	.001	.000
20	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.991	.910	.786	.579	.098	.007	.000
21	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.998	.967	.904	.766	.236	.034	.000
22	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.991	.968	.902	.463	.127	.002
23	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.998	.993	.973	.729	.358	.026
24	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.999	.996	.928	.723	.222

Table A.2 Cumulative Poisson Probabilities

$$F(x; \mu) = \sum_{y=0}^{x} \frac{e^{-\mu} \mu^{y}}{y!}$$

	μ									
	.1	.2	.3	.4	.5	.6	.7	.8	.9	1.0
0	.905	.819	.741	.670	.607	.549	.497	.449	.407	.368
1	.995	.982	.963	.938	.910	.878	.844	.809	.772	.736
2	1.000	.999	.996	.992	.986	.977	.966	.953	.937	.920
3		1.000	1.000	.999	.998	.997	.994	.991	.987	.981
4				1.000	1.000	1.000	.999	.999	.998	.996
5							1.000	1.000	1.000	.999
6										1.000

(continued)

P.T.O.

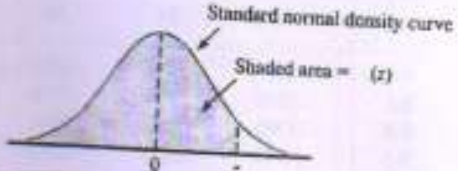
Table A.2 Cumulative Poisson Probabilities *(cont.)*

$$F(x;\mu) = \sum_{y=0}^{x} \frac{e^{-\mu}\mu^{y}}{y!}$$

	μ										
x	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	15.0	20.0
0	.135	.050	.018	.007	.002	.001	.000	.000	.000	.000	.000
1	.406	.199	.092	.040	.017	.007	.003	.001	.000	.000	.000
2	.677	.423	.238	.125	.062	.030	.014	.006	.003	.000	.000
3	.857	.647	.433	.265	.151	.082	.042	.021	.010	.000	.000
4	.947	.815	.629	.440	.285	.173	.100	.055	.029	.001	.000
5	.983	.916	.785	.616	.446	.301	.191	.116	.067	.003	.000
6	.995	.966	.889	.762	.606	.450	.313	.207	.130	.008	.000
7	.999	.988	.949	.867	.744	.599	.453	.324	.220	.018	.001
8	1.000	.996	.979	.932	.847	.729	.593	.456	.333	.037	.002
9		.999	.992	.968	.916	.830	.717	.587	.458	.070	.005
10		1.000	.997	.986	.957	.901	.816	.706	.583	.118	.011
11			.999	.995	.980	.947	.888	.803	.697	.185	.021
12			1.000	.998	.991	.973	.936	.876	.792	.268	.039
13				.999	.996	.987	.966	.926	.864	.363	.066
14				1.000	.999	.994	.983	.959	.917	.466	.105
15					.999	.998	.992	.978	.951	.568	.157
16					1.000	.999	.996	.989	.973	.664	.221
17						1.000	.998	.995	.986	.749	.297
18							.999	.998	.993	.819	.381
19							1.000	.999	.997	.875	.470
20								1.000	.998	.917	.559
21									.999	.947	.644
22									1.000	.967	.721
23										.981	.787
24										.989	.843
25										.994	.888
26										.997	.922
27										.998	.948
28										.999	.966
29										1.000	.978
30											.987
31											.992
32											.995
33											.997
34											.999
35											.999
36											1.000

Table A.3 Standard Normal Curve Areas

$\Phi(z) = P(Z \le z)$



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
−3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
−3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
−3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
−3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
−3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
−2.9	.0019	.0018	.0017	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0038
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
−1.8	.0359	.0352	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
−1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0722	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
−0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
−0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3482
−0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

(continued)

Table A.3 Standard Normal Curve Areas (cont.) $\Phi(z) = P(Z \le z)$

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9278	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6812**
Unique Paper Code	:	12481402
Name of the Paper	:	Basic Econometrics
-6.2Name of the Course	:	**B.A. (H) Business Economics 2023 (LOCF)**
Semester	:	IV
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question 1 is compulsory. Attempt Question 1 and any five other questions.

Q.1. Provide reasons and state whether the following statements are true or false.

(i) In the regression model $\ln Y_i = \beta_1 + \beta_2 X_i + u_i$, if $\hat{\beta}_2$ is multiplied by 100, we obtain the growth rate estimate of Y_i.

(ii) Adjusted R^2 is always lesser than unadjusted R^2.

(iii) Ceteris paribus, the more dispersed are the sample regressor values in a linear regression, the greater is the variance of its coefficient.

(iv) If p-value of a test statistic is greater than the chosen level of significance α, then we reject the null hypothesis at the α level of significance.

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(v) In the regression model $Y_t = \beta_1 + \beta_2 X_t + u_t$, if the OLS residuals are plotted against time (t), and a distinct pattern is observed, then it indicates the presence of heteroscedasticity. (5 x 5)

Q.2. A firm's five-year data of profits earned in thousands of rupees (Y) and amount of a good produced in million units (X) is given below,

Year	2010	2011	2012	2013	2014
Y (in Rs. '000)	60	90	80	70	50
X (in million units)	6	5	4	3	2

Use the data to:
(i) Estimate the equation of the linear regression line of Y on X
(ii) Calculate the residual sum of squares for the regression.
(iii) What proportion of the variation in Y is explained by X?
(iv) Test at the 5% level of significance whether the slope coefficient is greater than 2.
(v) Calculate the 90% confidence interval for the mean predicted value of Y when $X = 4.5$ (3,1,1,3,2)

Q.3. (a) The following regression model was estimated using data collected from 34 retail stores:

$\hat{Y}_i = 5837.53 - 53.217X_{2i} + 3.613X_{3i}$
$se = (628.151)\ (6.853)\quad (0.6852)$
RSS = 19472.33 TSS = 52093.55

where Y_i is the monthly sales of a good; X_{2i} is the price (in Rs.) at shop i; and X_{3i} is the "in store" promotional expenditure (in thousand rupees) at store i.

(i) Interpret the estimated partial slope coefficient of X_3
(ii) Calculate the values of R^2 and adjusted R^2.
(iii) Test the model for overall goodness of fit at $\alpha = 0.01$.

(b) List the steps required to test for the normality of the population disturbance term. (1,3,3,3)

Q.4. Consider the results of the regression model applied to the Savings (Y) and Income (X) data for the two periods:
Period-I: 1989-90 to 1995-96 and Period-II: 1974-75 to 1988-89.

$\hat{Y}_t = -3004.959 - 25595.554D_t + 0.249X_t + 0.075D_tX_t$
$t = \quad (-0.910)\quad (-2.945)\quad (13.752)\quad (3.454) \qquad R^2 = 0.9951$

where $D = \begin{cases} 1 \text{ for observations from Period I} \\ 0 \text{ for observations from Period II} \end{cases}$

(i) What is the base/control category for this regression?
(ii) Is such a model called and ANOVA model or an ANCOVA model?
(iii) Interpret the meaning of the coefficient value 0.075?
(iv) Test whether the model suggests the presence of structural change in the two periods.
(v) Write out the regression equation for Period-II. (1,1,2,4,2)

Q.5. In order to check for the presence of multicollinearity in the model $Y_i = \beta_1 + \beta_2 X_{2i} + \beta_3 X_{3i} + u_i$, an auxiliary regression was conducted and the result is:

$X_{2i} = 2.456 + 0.7952 X_{3i}$
$se = (0.56) \quad (0.0598) \qquad R^2 = 0.90$

(i) Compute the variance inflation factor. Do you find evidence of multicollinearity?
(ii) Are the estimates of β_2 and β_3 biased? Are these inefficient? Why or why not.
(iii) Without conducting the auxillary regression, how could one detect the presence of multicollinearity?
(iv) Describe two remedies to deal with multicollinearity and their limitations. (2,2,2,4)

Q.6. In a regression of average wages (W) on the number of employees (N) for a random sample of 30 firms, the following results were obtained:

Regression 1:

$\widehat{W}_i = 7.5 + 0.009 N_i$
$t = \qquad (16.10) \qquad R^2 = 0.9$

Regression 2:

$\frac{W_i}{N_i} = 0.008 + 7.8 \frac{1}{N_i}$
$t = \ (14.43) \ (76.58) \qquad R^2 = 0.99$

(i) How would you interpret the two regressions?
(ii) What might be the reason for transforming Regression 1 into Regression 2? What assumption has been made about the error variance in going from Regression 1 to Regression 2?
(iii) Can you relate the slopes and intercepts of the two models? Can you compare the R^2 of the two models? Give reasons.
(iv) How would you check for heteroscedasticity, test its existence and then remedy it? (use Regression 1 as the reference) (2,2,2,4)

Q.7. The results of a logarithmic regression of demand for food on price and personal disposable income is given as:

$$\log Q_t = 2.34 - 0.31 \log P_t + 0.45 \log Y_t + 0.65 \log Q_{t-1}$$

$$se = \quad (0.05) \quad (0.20) \quad (0.14)$$

$R^2 = 0.90 \quad d = 1.8$

where Q = food consumption per capita; P = food price; Y = real per capita disposable income

(i) Interpret the value of the coefficient 0.31.

(ii) Just by looking at the estimated regression, do you suspect serial correlation in it? Why or why not.

(iii) Which test do you use to confirm your suspicion and why?

(iv) Outline the steps of the above mentioned test and provide a conclusion on the basis of your calculations.

(v) State the conditions under which you may choose different tests for serial correlation. (1,2,2,2,3)

[This question paper contains 3 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6808**
Unique Paper Code	:	1248401
Name of the Paper	:	Macroerconomics & Applications II (LOCF)
-6.2Name of the Course	:	**B.A. (H) Business Economics, 2023**
Semester	:	IV
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Illustrate your answer with suitable diagrams, wherever required.
3. All parts of each question must be done together.
4. Attempt **FIVE** questions in all. **Question No. 1** is compulsory.

1. Consider the following statements whether true or false. Justify your answer with appropriate reason. Attempt any **FIVE**
   a. Irving Fisher's model of the consumer consumption depends on both income and wealth.
   b. All types of investment are directly related to the real interest rate.
   c. In a free float exchange rate regime, foreign exchange reserves are used to meet the excess demand for foreign exchange
   d. As per Impossible Trinity, it is impossible for a nation to have free capital flows, a fixed exchange rate, and independent fiscal policy.
   e. Endogenous Growth Model and Solow Growth Model both assume Constant returns to Capital.

P.T.O.

f. When an economy falls into the Liquidity Trap conventional monetary policy can be helpful.

(5x3=15)

2. The Neoclassical model of Business Fixed Investment shows how the level of investment (the addition to the capital stock) is related to the Marginal Product of Capital and the interest rates affecting the firms. Discuss. (15)

3. (a) Aggregate investment expenditure in an economy is financed through three different sources of savings. In light of the statement explain three sources in detail. (10)

(b) Discuss the advantages and disadvantages of floating & fixed exchange rate. (5)

4. (a) Explain why a monetary expansion for a small open economy under fixed exchange rate will have no effect on real income. Use appropriate diagram. (8)

(b) Explain the impact of fiscal expansion on real income under fixed exchange rate. Use appropriate diagram. (7)

5. (a) Given:

Production Function, $Y = 10(K)^{1/4}(EL)^{3/4}$
Population growth rate is 4%,
Depreciation rate is 10%,
Rate of technological progress is 2% and
Savings rate s = 0.128

Calculate:

a. Steady states level for each of the following: Capital per effective worker, output per effective worker, consumption per effective worker, saving and investment per effective worker, and depreciation per effective worker.
b. Steady state growth rates of capital per worker, output per worker, investment per worker, and consumption per worker.
c. Steady state growth rates of Aggregate Capital, Aggregate Output, Aggregate investment, and Aggregate Consumption.

(6+2+2)

(b) Explain Endogenous Growth Model in light of AK model. (5)

6. The government reduces taxes after creating a balanced budget, which results in a budget deficit. What will happen to debt in the long run? Will the government eventually have to raise taxes? If so, then by how much? Explain in detail. (15)

7. Write short notes on any **TWO** of the following:

   i. Shoe- leather Costs and money illusion
   ii. Tobin's q and its advantage
   iii. J curve

(7.5+7.5)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6813**
Unique Paper Code	:	12481403
Name of the Paper	:	Marketing Management
Name of the Course	:	**B.A. (H) Business Economics 2023 (LOCF)**
Semester	:	IV
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Read the instructions of each section carefully.

SECTION A

(Attempt any THREE questions)

Q1. Write short notes on **any two** of the following (5+5=10 Marks)

(a) Ansoff matrix
(b) Marketing Myopia
(c) Product line
(d) Integrated marketing communications

Q2. Write explanatory notes on vertical and horizontal marketing system. (5+5=10 Marks)

Q3. Recently, marketers are concentrating their marketing efforts on Rural India. Explain your understanding of rural marketing? Are the marketing strategies for rural areas same as urban areas? (5+5 =10 Marks)

Q4. Discuss the different stages in a product life cycle and different marketing strategies that need to be adopted.(10 Marks)

P.T.O.

SECTION B

(Attempt any THREE questions)

Q5. Discuss the pricing strategy to be adopted by Health First Ltd. for its range of Healthy snacking options for young children. You may take appropriate assumptions. (10 Marks)

Q6. Food Delivery Apps have become an integral part of urban Indian consumers today. In this context, discuss the Michael Porter's model of competition clearly bringing out the relevance of its five forces. (10 Marks)

Q7. Discuss which promotion tool(s) would be most effective for **any two** of the following, clearly stating your reasons:

a. Premium Range of Perfumes

b. Sugar Free Chocolates

c. Home-Furniture (10 Marks)

Q8. 'Stunning You' is a new start-up planning to launch whole range of cosmetic items ranging from skin toners to make-up. These items will be made entirely from organic, herbal, and natural ingredients. Consider yourself as the marketing manager of this venture. Identify and briefly explain the appropriate Segmentation, Targeting and Positioning strategy of the firm for strategically launching the brand and its products in the Indian market. (10 Marks)

SECTION C

(The question below is compulsory)

Q9. Read the case study below and attempt the questions following it:

FROZEN DESSERT vs ICE-CREAM

What's the difference between an ice cream and a frozen dessert? And does it matter?
Yes, if the battle between these giant companies is any indication.

India's largest fast moving consumer goods (FMCG) company, Hindustan Unilever, had filed a case against the country's largest ice-cream maker, Gujarat Cooperative Milk Marketing Federation, in the Bombay High Court, successfully obtaining an injunction against an advertisement for Amul ice cream which "disparaged frozen desserts".

Amul's ad had said that people should eat real ice cream made from milk, rather than frozen dessert made from "vanaspati". The court said the ad was "guilty of disparaging (criticizing) a rival product" — Unilever's Kwality Walls, which is a leader in frozen desserts.

So, what's the difference between the two? An ice-cream is made from milk fats while a frozen dessert is made from vegetable oil fats. Vanaspati is a hydrogenated vegetable oil used in cooking, a cheaper substitute for ghee or butter. But it's not used in frozen desserts, say manufacturers.

Every summer, a battle of sorts resumes between ice-cream and frozen dessert makers. Often, consumers are unaware about the difference.

"It becomes very difficult to convince people that we make ice-cream, and not frozen dessert. The approach that we have decided to undertake is to educate the consumers by pointing them to the differentiation which the government of India has made," Vice President and Head of Marketing at Havmor Ice Cream said.

From the beginning, we have been making only milk cream-based ice creams and we have never made frozen desserts. In one of our surveys, we found out that 92%-93% people did not know the difference between frozen desserts and ice-creams. We believe that consumers should know what they are eating", another official said.

Gujarat-based Havmor claims itself to be the second-largest dairy-based ice-cream maker, after Amul. The Food Safety and Standards Authority of India (FSSAI) has categorised ice-creams under "dairy based desserts/confections", further categorised as plain, medium fat and low fat depending on the percentage of total solids, milk fat and milk protein used.

The food regulator defines "frozen dessert/frozen confection" as a product obtained by freezing a pasteurized mix prepared with milk fat and/or edible vegetable oils and fat. The milk fat is used in such dessert for freezing.

According to ice-cream manufacturers, frozen desserts have captured a market share of 40 per cent of the Rs 1,800 crore market with a growth of approximately 10-12 per cent every year.

"We have recently come out with a campaign on print and digital mediums talking only about the goodness of our product -- that they are made from rich, creamy milk," said General Manager, Marketing (Dairy Products) of Mother Dairy.

But are both the products same from the health viewpoint?

A Chief Dietician at leading hospital in Delhi said that frozen desserts have more trans-fat as compared to ice-creams. "Trans fatty acids are not good. I believe trans fatty acids are used in frozen desserts because the normal oil does not freeze. I would suggest ice-creams are better than frozen desserts," he asserted.

Hindustan Unilever contests this. "Frozen deserts do not contain transfat, since their source of fat is vegetable oil which is trans-fat free," said HUL in a rejoinder.

P.T.O.

The Chief Executive Officer of Creambell -- which markets a combination of ice creams and frozen desserts -- said awareness should be raised on the virtues of vegetable oil compared to those of dairy fat.

"The cooking medium in our houses remains vegetable oil or mustard oil. This is the same ingredient that goes into the making of frozen dessert. The fact remains that nobody uses 'vanaspati' in frozen dessert," said the CEO of another leading company.

He said that most of the single serves are ice creams, while for catering and banqueting packs they use frozen desserts. "If we sell a frozen dessert, it is very clearly labelled. We cannot camouflage a frozen dessert as ice-cream or vice versa," he said.

He said that 10 per cent fat that goes into ice-cream is dairy fat, whereas that 10 per cent going into frozen dessert is vegetable oil fat.

Havmor's representative says it's a question of consumer awareness. "At the end of the day is frozen dessert a bad thing? No, it's not a bad thing, but there are differences. Importantly, a consumer has a right to know," he said.

The aftermath of awareness

So, when it was found (nearly a decade ago) that certain iced-delicacies call themselves "ice-creams" don't indeed have any cream (milk/dairy fat) in them- it was only fair to the consumers and their competitors; that they change their product category from ice-creams to frozen desserts.

Now companies that use Vanaspati in making their cold confectionaries, are legally obligated to call their products frozen desserts and mention the ingredients explicitly on the back label.

However, to stay ahead of the game, the genius retailers have found a loophole- they do mention the required details, but in an obscure corner of the box! Consumers have to hunt for these details- which let's face it, not many of us do.

Q9A) In context of the above write-up, suggest the marketing strategies (focusing on promotion and advertising) from the point of the companies which produce ice-creams and the companies which produce frozen desserts. You can make your assumptions. (5+5=10 Marks)

Q9B) What is ethical marketing? What suggestions will you give to these leading ice-cream and frozen desserts manufactures about ethics in marketing? (5 Marks)

[This question paper contains 5 printed pages.]

(11)

Your Roll No.....

Sr. No. of Question Paper	:	**6805**
Unique Paper Code	:	12483303
Name of the Paper	:	Research Methods and Statistical Packages (SEC)
Name of the Course	:	**B.A. (Hons.) Business Economics, 2023 (LOCF)**
Semester	:	IV
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **any five** questions.
3. **All** questions carry equal marks.

Q.1 (a) In each of the following cases, identify a test that you shall conduct with brief reasoning. Also explain how will you perform the same in SPSS? Also state the assumptions that are to be met in these tests.

(3*3=9)

(i) If you want to test a university claim that their students get an average package of Rs.10 Lakh after MBA. You sample 10 students from the university and check their package. Test if the university's claim is true.

(ii) If you want to check whether there is a difference in salary of employees of a particular company based on their education levels i.e. Graduation, Post-Graduation and Professional.

(iii) If you want to check whether there is a difference in marks of students according to classes attended or not attended.

P.T.O.

(b) Given below are the results of a test conducted by a researcher in SPSS while running a regression model

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.061	70	.200*	.990	70	.847

i. What did the researcher aim to determine by conducting this test? Write the hypothesis Clearly. (1)

ii. How is this test performed in SPSS? (2)

iii. Interpret the results. (3)

Q.2 (a) Following tables report regression output of 200 students where their science score is regressed on their reading score, gender, social studies score and math score. Gender is a dummy variable that is coded as 1 if female else 0.

Table-1 Model Summary

R	0.699
R square	0.489
Adjusted R Square	0.479
Standard error of the estimate	7.14817
F statistic	46.695
(Sig.)	(0.000)

a. Predictors: (constant), reading score, gender, social studies score, math score

b. Dependent variable: Science score

Table 2: Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	Beta	Std. error	Beta		
Constant	12.325	3.914		3.859	0.000
reading score	0.019	.005	0.488	3.678	0.001
gender	-2.010	1.023	-.101	-1.965	0.051
Social studies score	.050	.062	.054	.801	.424
Math score	.389	.074	.368	5.252	0.000

a. Predictors: (constant), reading score, gender, social studies score, math score
b. Dependent variable: Science score

Based on Table1 and Table 2,

i. Write regression equation of the above model and interpret it. (2)
ii. Comment on the overall goodness of fit of the model. (1)
iii. How will you interpret the coefficient of the dummy gender? Do you think gender is influencing science score of the students? (2)
iv. Explain the difference between standardized and unstandardized coefficients. (2)
v. Indicate the significance of the explanatory variables-math score, reading and social studies score clearly indicating the null and alternative hypothesis involved. (3)

(b) Explain how will you test the assumption of homoscedasticity and multicollinearity in SPSS? (5)

Q.3 (a) Explain the difference between Likert and Semantic Differential scale. Suppose a researcher wants to analyse the opinion of customers regarding their dining experience at a newly opened restaurant. Construct a ten item Likert and Semantic Differential scale to measure the perceived image of the restaurant. Make sure that the ten items under each format correspond to the same ten dimensions.
(10)

(b) Explain with an example when and how do we conduct the Wilcoxon Signed Rank test.
(5)

Q.4 (a) What do you understand by non-probability sampling method. Explain its various types with examples. (5)

(b) Identify with a brief reasoning the sampling methods that may be used in each of the following situations. (5*2=10)

(i) An NGO wants to pick a sample of girls across five neighbouring towns to provide education.

(ii) A researcher wants to study the academic performance of undergraduate students in three courses Economics (H), B.Com (H) and BBE in different colleges across Delhi University to find out students of which course are the best performers.

(iii) The population of interest is in the alphabetical order. Starting with the 8th name, every 9th member thereafter was selected as a member of the sample. The sample, therefore, consisted of numbers 8, 17, 26, 35 and so on.

(iv) A researcher is interested in collecting a sample of individuals suffering from a rare disorder. It is known that it is difficult to get hold of such people.

(v) A car company wishes to target its advertising campaign towards a sample of people who are most likely to purchase its luxury car.

Q.5 (a) There is a society of 1000 residents with four neighborhoods- P, Q, R, and S. A random sample of 650 residents of the society is taken whose occupations are doctors, engineers, and teachers. The null hypothesis is that each person's neighborhood of residency is independent of the person's professional division. The data are categorized as given below:

Categories	P	Q	R	S	Total
Doctors	90	60	104	95	349
Engineers	30	50	51	20	151
Teachers	30	40	45	35	150
Total	150	150	200	150	650

How can we test that the choice of profession is independent of the neighborhood (at alpha level of 0.05)? (8)

(b) Study the following tables and answer the questions given below:

ANOVA

Time

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	91.467	2	45.733	4.467	.021
Within Groups	276.400	27	10.237		
Total	367.867	29			

Multiple Comparisons

Dependent Variable: Time

Tukey HSD

(I) Course	(J) Course	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Beginner	Intermediate	5.60000*	1.43088	.046	.0523	11.1477
	Advanced	5.60000*	1.43088	.024	.0523	11.1477
Intermediate	Beginner	-5.60000*	1.43088	.046	-11.1477	-.0523
	Advanced	.00000	1.43088	1.000	-5.5477	5.5477
Advanced	Beginner	-5.60000*	1.43088	.024	-11.1477	-.0523
	Intermediate	-.00000	1.43088	1.000	-5.5477	5.5477

*. The mean difference is significant at the 0.05 level.

i. What does the above test signify? What are the null and alternative hypothesis in the above test? (2)

ii. Interpret the above tables (3)
iii. When do we use the 'Levene Test' of homogeneity of variance? (2)

Q.6 Write short notes on any three of the following with suitable examples (5*3=15)

(a) Research Process

(b) Errors in Hypothesis testing

(c) any two primary data collection techniques

(d) Descriptive and Causal Research

(e) Interval and Ratio Scale

[This question paper contains 3 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6818**
Unique Paper Code	:	12487910
Name of the Paper	:	Dearivatives and Currency Markets
Name of the Course	:	**B.A. (H) Business Economics 2023 (LOCF)**
Semester	:	VI
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All questions** carry equal marks
4. Use of Simple Calculator is allowed.

Q.1.(a) A company is operating in a country having the $ as its unit of currency has today invoiced sales to an Indian Company, the payment being due 3 Months from the date of invoice. The invoice amount is $13,750. At today's spot rate, it is equivalent to Rs.5,00,000. It is anticipated that the exchange rate will decline by 5% over the 3 months period and in order to protect the $ payments, the importer proposes to take appropriate action in the foreign exchange market. The 3 months forward rate is presently quoted at $0.0273. You are required to calculate the expected loss and to show how it can be hedged by a forward contract?

Q.1 (b) On August 2, 2022 the DM was quoted $0.3876/DM in New York. If on this same date, Paris was quoting FF 1.7500/DM and FF 4.6875/$, what are the incentives for arbitrage if dealer has DM 50,000?

(8 + 7 = 15 Marks)

P.T.O.

Q.2 (a) An exporter is a UK based company. Invoice amount is $3,50,000. Credit Period is 3 Months. Exchange rates in London are:

Spot Rate: $/£ = 1.5865 – 1.5905
3 Months Forward Rate: $/£ = 1.6100 – 1.6140

Rates of Interest in Money Market are:

	Deposit Rate	Loan Rate
$	7%	9%
£	5%	8%

Compute and show how a money market hedge can be put in place. Compare and contrast the outcome with a Forward Contract. (Given: $e^{0.0225} = 1.02275$, $e^{0.0125} = 1.01258$, $e^{0.02} = 1.0202$, $e^{0.0175} = 1.01765$)

Q.2 (b) The following table shows interest rates for the US $ and French Francs (FF). The spot exchange rate is 7.05 FF per US $. Complete the following entries:

Particulars	3 Months	6 Months
$ Interest Rate (Continuously Compounded)	11.5%	12.25%
FF Interest Rate (Continuously Compounded)	19.5%	.....
Forward Franc per $	.....	.....
Forward Discount per Franc % Per Year	.....	-6.3%

(Given: $e^{0.04875} = 1.049$, $e^{0.02875} = 1.029$, $e^{0.06125} = 1.063$, Ln (1.09768) = 0.0932)

(7 + 8 = 15 Marks)

Q.3 A call option is available on RIL stock with the following information:

Current Price of RIL stock = ₹ 2300
Time to maturity = 2 months
Risk free rate of interest = 10% p.a.
Volatility = 0.30
Strike Price = ₹ 2280

(a) Calculate price of call and put option using Black-Scholes formula.

(b) Again calculate price of call option using 2-steps binomial model.

(c) Why the price of call option calculated in part 1 and part 2 does not match?

(d) If a risk manager buy 10000 call options, and short 2000 put options, calculate portfolio delta using BS model. What position in the stock would make the portfolio delta neutral.

Additional Information: ln (2300) = 7.7407; ln (2280) = 7.7391

(4 + 6 + 2 + 3 = 15 Marks)

Q.4 Write Short notes on any three of the following:

(a) Interest Rate Swaps

(b) Target Zones

(c) Purchasing Power Parity

(d) Dollarisation **(5*3 = 15 Marks)**

Q.5 (a) Equity shares of TCS Ltd. are currently available at a price of ₹22 per share. Three call options are available at different strike prices. The strike prices are ₹20, ₹25 and ₹30 per share for a premium of ₹5, ₹4 and ₹2 respectively. An investor selects an appropriate strategy for three call options. Explain how he can do that. What would be his net profit/loss if on the expiration date the stock price is ₹15, ₹23, ₹28 or ₹35.

(b) The NIFTY Index Futures are traded with rupee value being ₹ 100 per index point. On 15th September, 2022 the Index closed at 1195 and December Futures (last trading day December 15, 2022) were trading at 1225. The historical dividend yield on the index has been 3% p.a. and the borrowing rate was 9.5% p.a.

(i) Determine whether on September 15, the December futures were underpriced or overpriced?

(ii) Is there a possibility of arbitrage gain?

(iii) Calculate the gain or loss if the index on 15th December closes at (a) 1260 or (b) 1175.

(Given: $e^{0.01625} = 1.0164$, $e^{0.02375} = 1.024$) **(7 + 8 = 15 Marks)**

Q.6 (a) What are the advantages and disadvantages of a freely floating exchange rate system versus a fixed exchange rate system?

(b) What is the expected relationship between the relative real interest rates of two countries and the exchange rate of their currencies? **(8 + 7 = 15 Marks)**

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6814**
Unique Paper Code	:	12481601
Name of the Paper	:	International Economics
Name of the Course	:	**B. A. (Hons.) Business Economics, 2023 (LOCF)**
Semester	:	VI
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Illustrate your answer with suitable diagram, wherever required.
3. Attempt any **Five** question.

1. Heckscher—Ohlin theory isolates the difference in relative factor abundance among nations as the basic cause or determinant of comparative advantage and international trade. Discuss. (15)

2. (a) What is meant by the equilibrium-relative commodity price in isolation? How does it define the nation's comparative advantage?

   (b) What does the factor—price equalization theorem postulate? Examine the effect of international trade on relative factor prices and income within each nation and its relationship to the international mobility of fictors of production? (8,7)

3. (a) Is it true that imposition of tariff leads to inefficiencies in an economy in terms of dead weight loss? Justify your answer with appropriate diagram.

P.T.O.

(b) In what way was international trade an engine of growth for the regions of recent settlement during the nineteenth century? Can we expect it to be an engine of growth for today's developing nations? Justify your answer. (8,7)

4. (a) Intra-industry trade is based on product differentiation and economics of scale. Discuss? How can we measure Intra-Industry trade?

(b) Under what conditions is the formation of a customs union more likely to lead to trade creation and increased welfare? What dynamic benefits are the nations forming a customs union likely to receive? (8,7)

5. (a) What are the various terms of trade? What are the main reasons for secular deterioration of terms of trade for developing countries ?

(b) What is the difference between a nominal tariff and an effective tariff? How is the rate of effective protection measured? (8,7)

6. (a) Discuss the salient features of agreement in Agriculture in WTO and its implications for India

(b) What is a Eurocurrency? What are the main reasons for the development and growth of the Eurocurrency Market? (8,7)

7. Write short notes on any three: (5×3= 15)

(a) Equilibrium foreign exchange rate

(b) Offer Curves

(c) Economies of scale and trade

(d) Leontiff Paradox

(e) The General Agreement on Tariffs and Trade (GATT)

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper	:	**6820**
Unique Paper Code	:	12487915
Name of the Paper	:	New Venture Planning & Implementation
Name of the Course	:	**B.A. (H) Business Economics 2023**
Semester	:	Semester - VI
Duration	:	3 Hours
Maximum Marks	:	75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **any five** question.
3. All question carry equal marks.

1. Shreya and Riya are currently pursuing final year of graduation in the Business Economics department of University of Delhi. They identified huge problems of locating a good PG accommodation in Delhi, as they both are out-station students. They spotted this opportunity as there was a huge gap in demand and supply. They plan to launch a comprehensive solution for students' PG related problems. Perform a market feasibility study for them and advise whether they should launch this idea in Delhi and later in India. (15)

2. Classify the following products on the basis of type of technology responsible for their success

   (I) Ready to Eat Food

(2) Smart watches

(3) Ear Pods

(3×5=15)

3. Explain the difference between Risk and Uncertainty Analysis. What are the different techniques of Uncertainty Analysis? Explain with the help of an example. (15)

4. Identify and quote examples of two ventures from relevant industries and elaborate the probable reasons of failure of any new business idea. Also, state the essential requirements that contribute to the success of any venture. (15)

5. Discuss in detail various initiatives taken up by the Government of India to build and strengthen Start Up Ecosystem in India. (15)

6. What are the factors you will consider to perform Social Impact Assessment (SIA) in case of construction of a new flyover at Punjabi Bagh, Delhi? (15)

7. Write Short Notes on any three.

(a) Estimation of Market Size

(b) Un-Conventional sources of funds available for aspiring entrepreneurs

(c) Parameters considered by prospective lenders during overall technical assessment

(d) Process of launching a new venture in India

(3×5=15)