**QP CODE**

**M2049**

**Enrollment Number: ……**

**Name: ……**

**MA DEGREE EXAMINATIONS, OCTOBER 2025**
**First Semester**
**M.A. Economics**
**M23EC01AC – Software Packages for Economic Analysis (Spreadsheet)**
**(Supplementary/Improvement)**
**(2023 July admissions)**

**Time: 3 Hours** **Max Marks: 70**

## Section A

**Answer any ten of the following questions in a word or sentence each. Each question carries 1 mark.**

1. What is relative cell referencing in MS Excel?
2. What values can the Boolean data type take?
3. State the use of "&"(ampersand) symbol in Excel.
4. What will the formula =SUM(1,2,3,4,5) return?
5. Write the output of the formula =IF(5<>7,FALSE,TRUE).
6. Which Excel function returns the maximum value of a given series?
7. Name the Excel tool that provides descriptive statistics like mean, median, mode, and standard deviation at once.
8. If p-value < significance level ($\alpha$), what decision do we make?
9. Which test is commonly used to compare the means of two groups?
10. What does a large chi-square value usually indicate?
11. In a regression model, what does regressand mean?
12. Interpret the $R^2$ value of 0.78.
13. Which Excel tool is commonly used for optimization?
14. What output will the formula =AND(TRUE,FALSE) return?
15. Is '12A' correct referencing of a cell in an excel worksheet? If not correct it.

**(1X10=10)**

## Section B

**Answer any five of the following questions in two or three sentences each. Each question carries 2 marks.**

16. If cell A1=15,B1=5,C1=12, Write an Excel formulae to find the average of the maximum and minimum values among these. What output will be returned?
17. Cell D1 receives the marks obtained by a student in Economics. Write an excel formula to label the student as "Passed" if the student has scored atleast 35 marks, else label the student as "Failed".

18. Write a short note on Standard Error.
19. Describe in brief a situation where chi-square test can be used.
20. Write a brief note on Type I error.
21. Illustrate the VLOOKUP() function using an example.
22. Write output of the formula =INDEX({"Red","Blue","Green","Violet","Yellow","Orange","Pink"}, 5) and describe its syntax.
23. Write an excel formula that returns TRUE if either Cell B1>C1 or C1<D1 or D1>=F1, else return FALSE.
24. What output will the formula =IF(AND(B1>=75, C1>=90),"Distinction",IF(B1>=40,"Pass","Fail")) return, given that B1=76 and C1=88 ?
25. Using an example illustrate how the MATCH() function is used.

**(2X5=10)**

## Section C

**Answer any five of the following questions in a paragraph each. Each question carries 4 marks.**

26. Cells C1:C6 has values 7,3,5,2,7,6 respectively, write the output of the following formulae:

    a. =IF(C1<C5,C1*C5,IF(C2<C6,C1/C5,C1-C5))
    b. =IF(OR(C6<C3,C4<C2),C6/C2,C7-C2)
    c. =IF(AND(C1+C2<C5+C6,C3+C4<=C5),C1+C5,C1-C5)

27. Write a note on using conditional formatting for data visualization.
28. Discuss the uses and benefits of Pivot Tables and Pivot Charts
29. Two independent random samples of students, each of size 10, were collected to compare their average scores. The mean score of the first sample is 60, while the mean score of the second sample is 55. The standard error of the difference between the two sample means is 2.5. At the 5% level of significance, the critical t-value with 18 degrees of freedom is 2.101. Test whether there is a significant difference between the mean scores of the two groups.
30. A researcher ran a multiple regression to study the effect of Advertising Expenditure and Employee Training on Sales Revenue using data from 95 firms. The estimated coefficients are significant: Advertising Expenditure = 0.55, Employee Training = 0.40, and the intercept = 1.80. The standard error of the regression is 0.65. Interpret the slope coefficients, the intercept, and the standard error of the regression.
31. Write a note on the types of optimization problems that can be undertaken in Excel.
32. Based on the below given spreadsheet representation, write the output of the formulae that follows.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Product** | **Quantity** | **Sales(₹)** | **Region** |
| 2 | Alpha | 10 | 500 | East |
| 3 | Beta | 5 | 250 | West |
| 4 | Alpha | 8 | 400 | East |
| 5 | Beta | 7 | 350 | West |

a. =COUNTIF(A2:A5,"Beta")
b. =AVERAGEIF(A2:A5,"Alpha",C2:C5)
c. =SUMIF(A2:A5,"Beta",C2:C5)
d. =COUNTIFS(A2:A5,"Beta",D2:D5,"West")

33. Write short notes on:

a. Scatter Plots
b. Histograms

**(4X5=20)**

## Section D

**Answer any three of the following questions in two pages each. Each question carries 10 marks.**

34. Discuss the steps involved in hypothesis testing.
35. Write short notes on:
    a. Mode
    b. Range
    c. Variance
    d. Skewness
    e. Kurtosis
36. Below given is the data on student performance. Based on this, answer the questions that follow.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Student** | **Subject** | **Marks** | **Grade** |
| 2 | Alex | Economics | 78 | B |
| 3 | Brian | History | 55 | C |
| 4 | Clara | Economics | 92 | A |
| 5 | Diana | Math | 40 | D |

a. Write a formula that assigns “Pass” if Marks are ≥ 50 and “Fail” otherwise for student Diana.
b. Write a formula to assign a student as “High Performer” if the student has Marks ≥ 75 AND Grade = A, otherwise “Not High”.
c. Write a formula to assign “Needs Attention” if Marks are < 50 OR Grade = D, otherwise “Satisfactory”.
d. Using VLOOKUP, write the formula to find the Marks scored by Clara.
e. Using INDEX and MATCH, write the formula to find the Grade of Brian.

37. Write short notes on**:**

a. p-value
b. Level of significance
c. Alternative Hypothesis
d. One-tailed test
e. Critical value

38. Below given is the data of the marks obtained out of 100 for two courses by 4 students. Based on the dataset, answer the questions that follow.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Student Name** | **Math** | **English** | **Attendance %** |
| 2 | Alice | 78 | 85 | 92 |
| 3 | Bob | 45 | 55 | 60 |
| 4 | Clara | 88 | 72 | 80 |
| 5 | David | 60 | 65 | 75 |

Write the output of the following formula

a. =IF(AND(B2>C2,D2>90),B2+5,C2+5)
b. =IF(OR(B2>B3,B3>B4),B2&B3,B3&B4)
c. =IF(AND(D4<90,D3>=50,D5<>70),D5+5,D5-5)
d. =IF(AVERAGE(B2:C2)>SUM(B3:C3),TRUE,FALSE)
e. =MAX(COUNT(B2:B5),LEN(B5),C3-B3)

39. Explain how a multiple linear regression can be done using Excel using an example. Also interpret its coefficients.

**(10X3=30)**