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1B3N22045 (Pages : 3) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BA Degree Examination, November 2022

BEC3B03 – Quantitative Methods for Economic Analysis – I

(2019 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

Part A

(Short answer questions: the maximum mark in this section is 25. The student may answer all of the questions, and each question carries 2 marks.)

1. Simplify $(2^{m+2} - 2^m)/2^m$
2. Solve the quadratic equation $3x^2 = x + 4$ using quadratic formula
3. Determine whether the following relationship is a function and explain why or why not $f = \{(1,3), (1,5), (2,3), (2,5)\}$
4. Graph the linear function:$2Y + 10X = 20$
5. What is a vertical line test?
6. Find the equation of a straight line where the first point is (2,6) and the slope is -1.5
7. What is scale of measurement of variable?
8. What is Likert scale question?
9. Assume that for a distribution, the total number of observations is 64, the smallest value is 20, and the highest is 90. Determine the required number of classes and class interval using Struge's rule.
10. State mathematical properties of arithmetic mean?
11. Consider the values 2, 4, -1, 16, 32, and find out the GM and HM.
12. Given the following data:number of observations =100; arithmetic mean=180; variance = 324. Find the coefficient of variation?
13. The arithmetic mean and median in a moderately skewed distribution are 28.1 and 27.6. Find the value of mode?
14. What is Gini Coefficient?
15. Difference between regression and correlation?

Part B

(Short essay questions: the maximum mark in this section is 35. The student may answer all of the questions, and each question carries 5 marks.)

16. Solve the following system of three equations in three unknowns

$$x + y + z = 6$$

$$x - y + z = 2$$

$$x + 2y - z = 2$$

17. Solve the following linear-quadratic system of equations algebraically and check your solution using graph.

$$y = x + 2$$

$$y = x^2$$

18. What are the various applications of functions in Economics?
19. Discuss the term statistics, its function and its importance in economics?
20. Summarise the major stages of a statistical investigation
21. Calculate AM, GM and HM for the data 32, 35, 36, 37, 39, 41 and 43. Show that AM>GM>HM
22. What are the drawbacks of various measures of dispersion, and how is the standard deviation able to overcome these drawbacks?
23. From the following data, calculate Karl Pearson's coefficient of correlation

Y	X
10	4
20	8
30	12
40	16
50	20

Part C

(Essay questions: answer any 2 questions andeach questions carries 10 marks)

24. What are the various methods of probability and non-probability sampling?
25. From the following data, calculate the Karl Pearson coefficient of skewness and comment on the distribution.

Wage in (000)	No of labours
0-10	6
10-20	4
20-30	5
30-40	7
40-50	8

26. The following data is related to the consumption and income of 10 families. Estimate the regression equation and interpret the results.

Sl No	Income	Consumption
1	80	65
2	90	70
3	100	85
4	120	90
5	140	120
6	150	135
7	160	145
8	180	160
9	180	160
10	200	180

27. What is rank correlation. From the following data calculate the spearman rank correlation and interpret the results.

X	Y
10	15
20	25
70	30
20	45
30	30
40	65
20	35
50	40
30	20
60	50

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Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BA Degree Examination, November 2022

BEC3B04 – Macro Economics – I

(2019 Admission onwards)

Time: 2 ½ hours Max. Marks : 80

Section A

Short Answer Questions: maximum mark in this section is 25. All questions can be attended. Each question carries 2 marks.

1. Define MPC
2. What is classical dichotomy?
3. Define structural unemployment
4. What is a macroeconomic model?
5. Define Keynesian aggregate demand function
6. What is Pigou effect?
7. Define personal income
8. What is money illusion?
9. Distinguish between ex ante and ex post variables
10. What is meant by paradox of thrift?
11. Define real GNP
12. What is the wage cut theory of Pigou?
13. Define dynamics
14. What is the transaction velocity approach?
15. Define demonstration effect

Section B

Paragraph Type questions. Maximum mark in this section is 35. All questions can be attended. Each question carries 5 marks.

16. Write a note on the major classical postulates
17. Explain the various methods of national income estimation
18. Elucidate the absolute income hypothesis
19. Critically examine the Say's law of market
20. What are the major macroeconomic issues?
21. Briefly explain the classification of GNP
22. Elaborate the scope and limitations of macroeconomics
23. What is meant by Keynesian under employment equilibrium? Explain.

Essay type questions: Answer any 2 questions. Each question carries 10 marks

24. Elaborate the origin and growth of macroeconomics. Explain the scope of macro economics.
25. Define national income. Explain the different concepts of national income
26. Elucidate the Keynesian revolution in macroeconomics. Is it really a revolution against classical ideas.
27. Permanent income hypothesis is a superior development in the consumption theory. Comment.

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester BA Degree Examination, November 2022

BEC3C04 – Mathematical Methods for Economics III

(2019 Admission onwards)

Time: 1 ½ hours Max. Marks : 40

Part A

(Very Short Answer Type Questions. Each question carries 2 marks)

1. Explain partial differentiation
2. What are concave and convex functions
3. Find maxima and minima of $x^4 - 2x^2$
4. What is relative extrema of a function
5. Find Marginal Cost from total cost function $TC = 35+5Q-2Q^2+2Q$
6. Given the demand function $Q = 5p+100$, find the elasticity of demand when price (p) is 5.
7. What is total derivative?

(Ceiling 10 marks)

Part B

(All Questions may be answered. Each question carries 5 marks)

8. Calculate the maximum profit $TR = 1400Q-6Q^2$ and $TC = 1500+80Q$
9. Find the points of inflection of the curve $Y= x^3-15x^2+20x+10$
10. Explain different types of functions in economics
11. Explain Legrange Multiplier. Examine the function $f(x,y) = 5x^2+6y^2-xy$ for maxima and minima, subject to $x+2y = 24$
12. The Total Revenue (R) and Total Cost (C) functions of a firm are given by $R = 30Q-Q^2$ and $C = 20+4Q$, where Q is total output. Find equilibrium output of the firm.

(Ceiling 20 marks)

Part C

(Short Answer Questions. *Answer any one* of the following questions)

13. Explain the rules of partial differentiation with suitable examples
14. For a firm under perfect competition, it is given that Total Cost function is $C = \frac{1}{3}q^3-5q^2+28q+27$, where q denotes units of output. For price P = Rs.19. Find quantity should be produced for attaining maximum profit and the amount of maximum profit.

(1 x 10 = 10 marks)