B – 3607

(Pages : 3)

Reg. No. : .....

Name : .....

Third Semester B.A. Degree Examination, December 2016
First Degree Programme Under CBCSS
ECONOMICS
Core Course – III
EC 1341 : Basic Tools for Economics – I
(2013 and 2014 Admissions)

Time : 3 Hours

Max. Marks : 80

All Saints' College Trivandrum

SECTION – A

Answer **all** questions in **one** word to maximum of **two** sentences. **Each** question carries **one** mark.

1. Constants.
2. Endogenous variable.
3. Linear function.
4. Marginal cost.
5. Quadratic equation.
6. Compound growth rate.
7. Matrix.
8. Partial derivative.
9. Maxima.
10. Definite integral.

(10×1=10 Marks)

P.T.O.

SECTION – B

Answer **any eight** questions **not** exceeding **one** paragraph. **Each** question carries **two** marks.

11. What is a polynomial function ?

12. What is a simultaneous equation ? Give example.

13. Solve the quadratic equation $2X^2 - 7X + 5 = 0$.

14. What is a diagonal matrix ? Give an example.

15. Find the limit of $\lim_{x \to 1} 3X^3 - 2X^2 + X + 4$.

16. Explain the characteristic equation and roots of matrix.

17. Write a note on higher order derivative.

18. Define and illustrate Parabola.

19. Illustrate and explain the intersection of sets.

20. Mention the properties of continuous function.

21. Write a note on consumer's surplus.

22. What is meant by point of inflexion ? **(8×2=16 Marks**

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SECTION – C

Answer **any six** questions **not** exceeding **120** words. **Each** question carries **four** marks.

23. Solve the simultaneous equations.

$9X + 3Y - 4Z = 35$ $X + Y - Z = 4$ $2X - 5Y - 4Z = 48$

24. Discuss the straight line, slope and intercept with an example.

25. What is growth rate and discuss different types of growth rate ?

26. Define the function and explain the different types of functions used in Economics.

27. Find the first order derivative $Z = 2X^3 + 9X^2Y + 5X^2 + 4Y^3 + 5XY^2 + 4Y^2$.

28. What is Venn diagram ? Illustrate and explain the different relations of sets by Venn diagram.

29. The Cost is given as $C = 4X^2 - 64X + 800$. At what level of output(X) the firm has minimum cost.

30. Explain the method of finding the Maxima and Minima of a function.

31. What is integration and discuss the methods of integration ? **(6×4=24 Marks)**

SECTION – D

Answer **any two** questions **not** exceeding **four** pages. **Each** question carries **fifteen** marks.

32. Solve the following equations using Crammer's rule.

$5X - 6Y + 4Z = 15$, $7X + 4Y - 3Z = 19$, $2X + Y + 6Z = 46$.

33. Briefly explain the application of Derivatives and integration in economic analysis.

34. Give a note on the graphs of functions. Draw the graph of $X^2 = 4Y$.

35. Explain the first order and second order Partial derivatives, and find the first order and second order partial derivative of $Z = 3X^3 - 2X^2Y + 2XY^2 + Y^3 + 8$.

(2×15=30 Marks)

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