

20U306

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Name:

Reg.No:

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC19U MEC3 C03 - MATHEMATICAL ECONOMICS

(Statistics - Complementary Course)

(2019 Admission onwards)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Explain the economic applications of differential equations.
2. What is difference equation?
3. Explain Average Productivity Curve and Marginal Productivity Curve.
4. Write a short on law of variable proportions.
5. Write a short note on $MRTS_{BA}$.
6. What are the conditions of maximization of output in producer's equilibrium?
7. What is elasticity of substitution?
8. Write any one property of Euler's theorem.
9. Define cob-web theorem.
10. Explain the steps involved in investment decisions.
11. Define IRR method of investment proposal.
12. Explain NTV method.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph).

Answer *all* questions. Each question carries 5 marks.

13. Find the general solution of the differential equation $\frac{dy}{dx} + 4y = -20$
14. What is lagged income determination model?
15. Find the elasticity of substitution of Cobb-Douglass production function.
16. Write a short note on economic significance of Cobb-Douglass production function.
17. Write a short note on the limitations of C.E.S production function.
18. Explain Risks and measurement of risks.
19. Explain probability distribution approach .

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

20. Solve the following exact differential equation $(4y + 8t^2)dy + (16yt - 3)dt = 0$
21. Optimize the C.E.S production function $P = 80[0.4k^{-0.25} + (1 - 0.4)l^{-0.25}]^{-1/0.25}$
subject to the constraint $5k + 2l = 150$

(1 × 10 = 10 Marks)
