RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, JULY 2021

THIRD YEAR [BATCH 2018-21]

Date : 15/07/2021

Time : 11.00 am – 3.00 pm

ECONOMICS (HONOURS)

Paper : IX

Full Marks : 100

Group : A

Answer **any six** of the following questions: [6×5]

1. Find out whether the following function is convex or concave:

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

2. Show that the function $f(x) = e^{-x^2}$ is quasi concave.

3. Suppose f is a function defined on a convex set U such that for every x_0 in the set

   $\{x \in U: f(x) \geq f(x_0)\}$ is a convex set. Explain the nature of the function f.

4. Suppose the aggregate consumption in period t, C_t is a linear function of aggregate income of the previous period, i.e., $C_t = A + BY_{t-1}$, where A,B>0 are constants. If the aggregate investment is constant at I and aggregate income is the sum total of consumption and investment, write out the difference equation for aggregate income and solve it. What restriction must be placed on B to ensure monotonic convergence?

5. Solve the following equation and ensure that the initial condition is satisfied :

$$\frac{dy}{dt} + 2y = 4 \; ; y(0) = 3$$

6. Suppose you have to maximize the utility function: $U = x^{1/4}y^{1/4}$. What should be the first and second order conditions? If you are told to maximize the same function with respect to the constraint: $5x + 5y = 100$ what change in the optimum conditions will take place?

7. Write down the Kuhn-Tucker conditions for the following problem:

$$\max x^2 + 2y^2 - x \; subject \; to \; x^2 + y^2 \leq 1$$

8. What is the importance of Hawkins-Simon condition in the context of input output analysis?

9. Show that the expenditure function is concave in prices.

10. State and prove Roy's identity.

11. Explain why the profit function should be homogenous of degree one in prices.

(1)

12. Consider the input requirement set: $V(2) = \{(4,6), (6,2)\}$. Find out three other input combinations that can produce 2 units of output.

Answer **any two** of the following questions: [2×10]

13. Solve the following difference equation and find the nature of the time path:

$$y_{t+2} + 3y_{t+1} - \frac{7}{4}y_t = 9$$

14. Let the demand and supply functions be:

$$Q_d = 9 - P + \frac{dP}{dt} + 3\frac{d^2P}{dt^2}$$
$$Q_s = -1 + 4P - \frac{dP}{dt} + 5\frac{d^2P}{dt^2}$$

Find the price path assuming market clearance at every point of time. Also find the nature of the time path.

15. A consumer has the utility function $u = x_1 x_2$ and face the following budget and 5time constraints: $2x_1 + 3x_2 \leq 100 \ and \ x_1 + 4x_2 \leq 80$. solve for the utility maximizing consumption bundles.

16. State and explain the four fundamental duality relations with respect to the consumer optimization problem.

Group : B

Answer **any four** of the following questions: [4×3]

17. Define repo rate and reverse repo rate.

18. Define fiscal deficit.

19. Briefly discuss the idea of fiscal federalism.

20. Define RNR, concerning the debate on GST rates.

21. Briefly explain the notion of full convertibility of rupee in capital account.

22. What is meant by NPA?

23. Mention two rationales for economic reforms in India.

24. Point out two departures from the planned economy model in the post reform era in the Indian economy.

Answer **any one** of the following questions: [1×8]

25. What is GST? Discuss important rationales behind implementing GST in India.

26. Discuss impact/s of WTO on Indian economy.

Answer **any two** of the following questions: [2×15]

27. What are the major weaknesses of Indian tax structure which prevailed prior to initiation of economic reforms in India? What measures were adopted to get rid of the weaknesses? (8+7)

28. a) Define services sector.

    b) Discuss in detail the important causes of the growth in services sector in India.

    c) Discuss in detail the factors responsible for slower growth of employment in services sector in India. (3+7+5)

29. Discuss in detail causes and consequences of banking sector reforms in India. (15)

30. Discuss the major changes in EXIM policies in India during the post reform period. (15)

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