D 93480 **(Pages : 4)** **Name.....**

Reg. No.....

FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

Financial Economics

FEC 1C 03—MATHEMATICS FOR ECONOMICS

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*
All questions carry equal marks.

1. If the determinant of a matrix is equal to zero, that matrix is called a :

   a) Singular matrix. b) Non-singular matrix.

   c) Null matrix. d) Inverse of a matrix.

2. The derivative of exponential function is :

   a) The reciprocal of the derivative. b) The exponential itself.

   c) Zero. d) None of these.

3. A polynomial function of degree 2 is called a :

   a) Quadratic function. b) Power function.

   c) Cubic function. d) None of these.

4. The nature of relationship between bonds prices and interest rates is :

   a) Negative. b) Positive.

   c) No relation. d) Linear.

5. If $A = \begin{bmatrix} 6 & 5 \\ 4 & 2 \end{bmatrix}$, find the determinant of A :

   a) 12. b) 20.

   c) 8. d) – 8.

6. dy/du × du/dx represents :

   a) Product rule. b) Quotient Rule.

   c) Chain Rule. d) None of these.

Turn over

7. Differentiate x^4 with respect to x :

   a) x^4. b) $4x^3$.

   c) $4x$. d) 4.

8. The order of the largest non-zero minor is known as :

   a) Cofactor. b) Determinant.

   c) Rank. d) Inverse.

9. Sinking fund is :

   a) The fund for rebuilding a structure when its economic life is over.

   b) Raised to meet maintenance costs.

   c) The total sum to be paid to the municipal authorities by the tenants.

   d) A part of the money kept in reserve for providing additional structures and structural modifications.

10. Find the derivative of $f(x) = 6x^3 - 9x + 4$:

    a) $6x^2 - 9x$. b) $18x - 9$.

    c) $18x^2 - 9$. d) $18x^2 - 9x + 4$.

(10 × 1 = 10 marks)

Part B

Answer any **five** *questions.*
Each question carries 2 marks.

11. Define definite integral.

12. Calculate the derivative of $f(x) = e^{1+x}$.

13. What do you mean by convex function ?

14. What is annuity and how does it work ?

15. Find the derivative of the following function using the definition of the derivative $f(x) = 4x^2 + 10x + 25$.

16. Differentiate between minor and cofactor of a matrix. Give suitable example.

17. If total cost function is $C = \frac{1}{8}x^2 + 3x + 98$, find the marginal cost.

18. Examine the relationship between bonds price and interest rates.

(5 × 2 = 10 marks)

Part C

Answer any **eight** *questions.*
Each question carries 5 *marks.*

19. Define rank of a matrix. Describe how to find rank of a matrix using an example.

20. Logarithmic functions are the inverses of exponential functions. Prove.

21. Solve the following equations using matrix method

$$2x-3y+5z=11$$
$$5x+2y-7z=-12$$
$$-4x+3y+z=5$$

22. Explain the meaning and properties of determinants.

23. What do you mean by marginal utility? Given the utility function $u = xy + 3x + 4y$, find the marginal utility of x and y.

24. Explain the economic applications differentiation.

25. Distinguish between maxima and minima. Explain the properties of maxima and minima.

26. Differentiate $f(x)=\left(2x^2+1\right)^2$.

27. Discuss the meaning and applications of linear algebra.

28. Given the total revenue $R = 15Q - Q^2$ find the Average Revenue (AR), Marginal Revenue (MR) and the level of output Q that maximizes Total Revenue (TR).

29. Prepare a note on different types of functions.

30. What do you mean by compounded interest rate ? Suppose you deposit Rs. 4,000 into an account paying 6% annual interest compounded quarterly, how much money will be in the account after 5 years ?

(8 × 5 = 40 marks)

Part D

Answer any **two** *questions.*
Each question carries 10 *marks.*

31. Solve the following simultaneous equations using Crammers's rule

$$5x-6y+4z=15$$
$$7x+4y-3z=19$$
$$2x+y+6z=46$$

32. Discuss the marginal concepts related to demand, supply, cost, revenue and production functions. Explain the application of calculus of multivariable functions in economics.

Turn over

33. Explain the meaning, steps and conditions of optimization.

Optimize $f(x) = 2x^3 - 30x^2 + 126x + 59$.

34. Maximize the following total revenue TR function by finding the critical values, testing the second order conditions and calculating the maximum TR

$TR = 32Q - Q^2$.

(2 × 10 = 20 marks)

D 93479 **(Pages : 4)** **Name**.....

Reg. No.....

FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

Financial Economics

FEC 1C 02—MACROECONOMIC THEORY AND POLICY

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*
All questions carry equal marks.

1. The user cost of capital depends on :

   a) Real rate of interest, rate of depreciation and corporate income tax.

   b) Real rate of interest, stock of money supply and MEC.

   c) Rate of depreciation, velocity of circulation and CRR.

   d) Corporate income tax, rate of saving and annual growth of GDP.

2. Choose the pair wrongly matched :

   a) Psychological Theory-Pigou.

   b) Overinvestment Theory-Robertson.

   c) Sunspot Theory-Jevons.

   d) Under Consumption Theory-Hayek.

3. Unemployment due to deficiency of effective demand is called :

   a) Frictional unemployment. b) Structural unemployment.

   c) Cyclical unemployment. d) Disguised unemployment.

4. As there is no crowding out, fiscal policy is fully effective in :

   a) Keynesian range of LM curve. b) Intermediate range of LM curve.

   c) Classical range of LM curve. d) All the three ranges of LM curve.

5. The term *natural rate of unemployment* was introduced by :

   a) A.W. Phillips.
   b) A.C. Pigou.
   c) Milton Friedman.
   d) Knut Wicksell.

6. Which among the following concept/s was/were used by Hicks to explain business cycles ?

   a) Saving-investment relation and multiplier concepts given by Keynes.
   b) Acceleration concept given by Clark.
   c) Multiplier-acceleration interaction concepts given by Samuelson.
   d) All the above.

7. The balance of payments equals :

   a) The difference between household spending and income.
   b) The difference between government spending and income.
   c) The difference between inflation and unemployment.
   d) A measure of the value of economic transactions between residents of a country and the rest of the world.

8. Identify the correct statements related to Tobin Q ratio :

   Statement I : It was invented by Nicholas Kaldor in 1966.

   Statement II : The Q ratio was popularized by Nobel Laureate James Tobin.

   Statement III : It relies on the concepts of market value and replacement value.

   a) Statements I and II are correct.
   b) Statements I and III are correct.
   c) Statements II and III are correct.
   d) Statements I, II and III are correct.

9. According to real business cycle theory, ———— has/have no role to play in a business cycle.

   a) Technical changes.
   b) Monetary shocks.
   c) Innovations.
   d) All the above.

10. The concept of '*inside money and outside money*' has been suggested by :

   a) Milton Friedman.
   b) J. M. Keynes.
   c) Gurley and Shaw.
   d) James Duesenberry.

(10 × 1 = 10 marks)

Part B

Answer any **five** *questions.*
Each question carries 2 *marks.*

11. Define money multiplier.
12. Define frictional unemployment.
13. What is meant by super multiplier ?
14. Distinguish between autonomous investment and induced investment.
15. Explain Ratchet Effect.
16. Distinguish between recession and depression.
17. What are the determinants of investment ?
18. Prepare a note on Radcliff- Sayers thesis.

(5 × 2 = 10 marks)

Part C

Answer any **eight** *questions.*
Each question carries 5 *marks.*

19. Examine permanent income hypothesis of Milton Friedman.
20. Define National Income. What are the different measures of National Income ?
21. Explain liquidity preference theory of interest.
22. Discuss the H-theory of money supply.
23. Explain Lucas critique. How is it related to random walk model of consumption ?
24. Explain Friedman's re-statement of quantity theory of money.
25. Explain Schumpeter's innovation theory of business cycles.
26. Distinguish between aggregate demand and aggregate supply. What are the components of aggregate demand ?
27. Define Inflation. Distinguish between demand pull and cost push inflation.
28. Define money supply. What are the determinants of money supply ?

29. Prepare a note on life-cycle hypothesis.

30. What is the Keynesian view on wage price flexibility ?

(8 × 5 = 40 marks)

Part D

Answer any **two** *questions.*
Each question carries 10 *marks.*

31. Explain accelerator theory of investment. Illustrate the interaction between multiplier and accelerator.

32. Illustrate IS-LM model of a three sector economy using suitable diagrams. Evaluate the relative effectiveness of monetary and fiscal policies.

33. State and explain the theories of demand for money of Milton Friedman and William Baumol.

34. Explain the political business cycle theory.

(2 × 10 = 20 marks)

D 93478 (Pages : 4) Name.....

Reg. No.....

FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2020

(CCSS)

Financial Economics

FEC 1C 01—MICRO ECONOMIC THEORY AND POLICY—I

(2019 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all** *questions.*
All questions carry equal marks.

1. Point out the determinant/s of the entry-preventing price in Sylos's model :
   (a) The elasticity of market demand.
   (b) The technology of the industry, which defines the available sizes of plant.
   (c) The prices of factors of production, which determine the total average cost of the firms.
   (d) All the above.
2. The twin non-confess strategy choice in the Prisoners' Dilemma can be described as :
   (a) Pareto optimal and stable.
   (b) Non-Pareto optimal and unstable.
   (c) Pareto optimal and unstable.
   (d) Non-Pareto optimal and stable.
3. According to Marris's model of managerial enterprise, maximisation of balanced rate of growth depends on :
   (a) The rate of growth of demand for the firms' product.
   (b) The rate of growth of capital supply.
   (c) Both (a) and (b).
   (d) None of these.
4. When both the firms are followers of each other in Stackelberg's model of duopoly, final equilibrium results in :
   (a) Joint profit maximization. (b) Equal profit for both.
   (c) Cournot solution. (d) Perfectly competitive solution.

5. Identify the incorrect statement related to Edgeworth duopoly model :

   (a) Edgeworth's solution is more realistic and it answers Bertrand's paradox.

   (b) Edgeworth model gives solution of Cournot disequilibrium.

   (c) Collusion is not always possible as firms have incentives to break cooperation in their search for higher profits.

   (d) All the above.

6. According to Houthakker's and Taylor's dynamic model, demand in any particular period depends on :

   (a) Price. (b) Stocks of the commodity.

   (c) Current level of income. (d) All the above.

7. The Linear expenditure system was introduced by :

   (a) Nerlove. (b) Houthakker.

   (c) Richard Stone. (d) Roy C Geary.

8. According to Markowitz, when income increases by a small increment :

   (a) It leads to increasing marginal utility of income.

   (b) It leads to diminishing marginal utility of income.

   (c) It leads to diminishing total utility of income.

   (d) It keeps total utility of income constant.

9. Zero-sum is a situation in game theory in which the net change in wealth or benefit is always :

   (a) Positive. (b) Negative.

   (c) Unity. (d) None of the above.

10. Which among the following is not a postulation of Euler's product exhaustion theorem :

   (a) It assumes a linear standardised production of first degree which implies invariable returns to scale.

   (b) It assumes that the factors are complementary.

   (c) It assumes that factors of production are indivisible.

   (d) It assumes that there is perfect competition.

(10 × 1 = 10 marks)

Part B

Answer any **five** *questions.*
Each question carries 2 *marks.*

11. What is expected value ?
12. Define saddle point.
13. What is meant by Bandwagon effect ?
14. Prepare a note on Sylos's postulate.
15. Briefly explain the maximin strategy.
16. What is elasticity of substitution ?
17. Differentiate between sequential games and repeated games.
18. Explain Prisoner's dilemma.

(5 × 2 = 10 marks)

Part C

Answer any **eight** *questions.*
Each question carries 5 *marks.*

19. Examine Bain's theory of limit pricing.
20. Prepare a note on preferences towards risk.
21. What is a cartel ? Explain different types of cartels.
22. What is meant by Nash Equilibrium ?
23. Explain Euler's theorem mathematically.
24. Explain the properties CES production function. Point out its merits and demerits.
25. Discuss Marris's model of managerial enterprise.
26. Define collusion. Differentiate between price signaling and price leadership.
27. What are engineering cost curves ?
28. Explain translog production function.

29. Explain St. Petersburg Paradox. How did Daniel Bernoulli solve this Paradox ?

30. Explain Sweezy's non-collusive stable equilibrium model.

(8 × 5 = 40 amrks)

Part D

Answer any **two** *questions.*

Each question carries 10 *marks.*

31. Differentiate between risk and uncertainty. Discuss Freedman-Savage Hypothesis. Bring out the improvement put forward by Markowitz

32. What is non-collusive oligopoly ? Critically examine Cournot's duopoly model.

33. Explain the new theory of consumer demand of Kelvin Lancaster.

34. Explain the relationship between technical progress and production function. Evaluate the properties of Cobb-Douglas production function as a linear homogeneous production function.

(2 × 10 = 20 marks)