B.A. (Honours) Examination,2022

Semester—II (CBCS)

Subject: Economics

Course-CC-3((Introductory Macroeconomics)

Time: 3 hours

Full Marks: 60

Questions are of value as indicated in the margin

Qs. 1.   Answer any eight questions from the following:

2X8=16

(a) Define an intermediate good. Why would inclusion of intermediate goods in measuring GNP involve double counting? Clarify with an example.

(b) How do you derive Personal Disposable Income (PDI) from GNP at market prices?

(c) "Sum of leakages must equal the sum of injections" Justify the statement in a three sector circular flow of income.

(d) Why is profit regarded as a residual factor income? Can profit be negative or zero?

(e) Interpret the Keynesian consumption function $C=a+bY^d$. Do you need any restrictions on the parameters 'a' and 'b'?

(f) Derive a saving function in a two sector economy. When does a saving function rotate clockwise? Show by a diagram.

(g) If MPC is greater than or equal to 1, then what problem arises in determination of equilibrium output? Show by using diagrams.

(h) Why are prices assumed to be fixed in short run in a Keynesian framework?

(i) Define IS curve. Derive the equation of the IS curve in a two sector economy.

(j) Define LM curve .Derive the equation of the LM curve?

(k) What were the Keynesian assumptions on interest rates?

(l) What policies did the Mercantilists propose for a growing economy?

(m) Briefly state the criticisms on Mercantilists position.

(n) How is interest rate determined in a loanable funds market?

Qs. 2.   Answer any five questions from the following:

4X5=20

(a) For a hypothetical economy, Gross investment Rs. 400, depreciation Rs. 100, Consumption Rs.1100, Net foreign remittances Rs. -70, net indirect taxes Rs. 38, govt. purchases Rs. 600 and trade deficit Rs 40. Find $GDP_{MP}, GNP_{MP}, NNP_{MP}$ and NNP_{FC}.

(b) What is"Paradox of Thrift" Explain the concept while (i) Investment is autonomous (ii) investment is a positive function of income.

(c) How is equilibrium income determined in a closed economy with government?

(d) "Multiplier cuts both ways" Justify the statement with appropriate diagrams

(e) Interpret points which are not on the IS curve.

(f) Derive the Balanced Budget Multiplier (BBM) in an economy with lump sum taxes.

(g) Why is tax rate multiplier negative in SKM and smaller in absolute value than the govt. expenditure multiplier? Explain.

(h) Write a note on " Say's Law of Markets"

(i) Write a note on " Quantity theory of money"

Qs. 3.   Answer any two questions from the following:

12X2=24

(a) i)   Assume that in a hypothetical economy GNP is Rs. 5000, Personal Disposable income(PDI) is Rs. 4100 and the govt. budget deficit is Rs. 200, Consumption Rs. 3800 and the trade deficit Rs. 100. Find the size of Investment (I) and Govt. Spending(G).

ii)   Is GNP a true index of a Nation's welfare? Discuss.

6+6

(b) i)   Suppose $C= 10+.75 Y^d$, $t=10\%, I_0=G_0=10$ Find the value of Y_E, Budget Deficit at initial Y_E and Budget Deficit when t is raised to 20%.

ii)   "Direct Govt. Expenditure is more expansionary than a policy of Transfer" Justify the statement in the context of SKM.

6+6

(c) (i)   Suppose $C=400+.75 Y^d$, $I= 400-20r$, $G=300$, $T=400$, $M^d/P=.25-10r, M^s=1000$ and $P=2$. Then Derive the equations of IS and LM curves and then find equilibrium(Y,r)

6+6

(ii)   Show the effects of an expansionary fiscal policy in IS-LM framework and explain the transmission mechanism.

(d) (i)   Explain the equilibrium in a Classical Labour market.

(ii)   Why is Classical Aggregate Supply curve vertical?

6+6

Time: 3 Hours   Full Marks: 60

Questions are of value as indicated in the margin
Answer any four (04) of the following questions

1. (i) Find a 2×2 orthogonal matrix P whose first row is a multiple of (3,-4).

   (ii) Find an upper triangular matrix such that $A^3 = \begin{bmatrix} 8 & -76 \\ 0 & 27 \end{bmatrix}$.

   (iii) Let $A = \begin{bmatrix} 5 & 2 \\ 0 & k \end{bmatrix}$, then find all numbers k may take for which A is a root of the polynomial $f(x) = x^2 - 7x + 10$.

   (iv) Let $A = \begin{bmatrix} 1 & 2 \\ 3 & 6 \end{bmatrix}$, Find a 2×3 matrix B with distinct non zero entries such that AB = 0.   4+3+4+4 = 15

2. (i) Show that $A = \begin{bmatrix} -1 & 7 & 1 \\ 2 & 3 & 4 \\ 5 & 0 & 5 \end{bmatrix}$ can be expressed as a sum of a symmetric and a skew-symmetric matrix.

   (ii) Compute the Adjoint of the matrix $A = \begin{bmatrix} 3 & 2 & 1 \\ 1 & 1 & 1 \\ 5 & 1 & -1 \end{bmatrix}$ and the inverse of the matrix (A^{-1}).

   (iii) Solve the given set of equations by matrix method: x-3y = 4, 3x-y = 5.   4+8+3 = 15

3. (i) Prove that X-1 is a factor of the following determinant: $\begin{vmatrix} X+1 & 3 & 5 \\ 2 & X+2 & 5 \\ 2 & 3 & X+4 \end{vmatrix}$

   (ii) Prove without expanding that $\begin{vmatrix} bc & a^2 & a^2 \\ b^2 & ca & b^2 \\ c^2 & c^2 & ab \end{vmatrix} = \begin{vmatrix} bc & ab & ca \\ ab & ca & bc \\ ca & bc & ab \end{vmatrix}$.

   (iii) Solve by Cramer's Rule: 2x-z = 1, 2x+4y-z = 1, x-8y-3z = -2   5+5+5=15

4. Define the Local and Global maxima in case of a function of several variables. Find the critical point(s) of the following function, and use the second partials test to find any local extrema or saddle point:
$$f(x,y) = 4x^2 + 9y^2 + 8x - 36y + 20$$
                                                                                                      3+12 = 15

5. Find the linear approximation L(x,y) and the quadratic approximation Q(x,y) of the following function near the point (0, 0): $f(x,y) = Sin2x + cosy$.   7+8 = 15

6. Let $f(x) = -x^2 + 2ax + 4a^2$ be a one variable function where 'a' is a parameter. Derive the Optimum value function $f^*(a)$ and then verify the envelop theorem.   5+10 = 15

7. Find the optimum values of the following functions using Lagrange multiplier and verify whether the optimum values are maximum or minimum:
    Objective function: $f(x,y) = x^2 + y^2$; Constraint: $xy = 1$
    Objective function: $f(x,y) = (6 - x^2 - y^2)^{1/2}$; Constraint: $x + y = 2$ 7+8 = 15

8. Suppose a firm maximizes its output $Q = L^\alpha K^{1-\alpha}$ subject to its cost $C = wL + rK$, where all symbols follow their usual meanings. Proof the Euler's theorem. If there is another problem where the firm minimizes its cost subject to a given level of output, then show that both problems provide same outcome in the process of optimization.   7+8 = 15

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B.A. (Honours) Examination, 2022
Semester – II (CBCS)
GEC-2 (Economics)
Introductory Macroeconomics

Time: Three Hours   Full Marks: 60

Questions are of value as indicated in the margin.
Attempt any FOUR questions.

1. What do you understand by National Income? What are the methods for measuring National Income of a country? Discuss the Value Added Method in this context. What precautions should be taken while measuring National Income through Value Added Method?
   [2+3+7+3]

2. Explain why Classical aggregate supply curve is vertical in nature.   15

3. What do you understand by the Quantity Theory of Money (QTM)? Explain Fisher's version of QTM.   [5+10]

4. Discuss the output adjustment process in the Simple Keynesian Model. In this context mention the justification of the assumption that marginal propensity to consume is less than one.   [10+5]

5. (a) In the Keynesian cross model, assume that the consumption function is given by C=200+0.75(Y−T) where government taxes (T) is 100 and C is 800.
   (i) Find the equilibrium income.(ii) If government taxes increases to 200, what is the new equilibrium income?(iii) What level of government taxes is needed to achieve an income of 2000?   [3+5+7]

6. What is Consumption function? What are the APC and MPC? What factors other than income are likely to be most important in determining consumption?
   [3+5+7]

7. How do the Commercial banks create credit? What are the limitations of credit creation?   [10+5]

8. Write Short Notes on [any two]   [2 x7.5]
   a) Paradox of thrift
   b) Cash Reserve Ratio
   c) Repo Rate & Reverse Repo Rate

UNDERGRADUATE EXAMINATION, 2022

SEMESTER – II (CBCS)

Subject: POLITICAL SCIENCE

Course: GEC-II (Generic Elective Course)

(Political Theory-II)

Time: 3 Hours

Full marks: 60

Questions are of value as indicated in the margin.

Answer any four questions

1. Discuss the theories of Negative and Positive Liberty.   15

2. Write a short note on the historical evolution of Democracy. Explain the different models of Democracy.   5 +10=15

3. Define the concept of Power in Political Science. What are the three types of authority identified by Max Weber?   7.5 + 7.5 = 15

4. Bring out the importance of Mahatma Gandhi's concept of Satyagraha. Explain the characteristics of an ideal Satyagrahi according to Gandhiji.   10+5= 15

5. "The World is a Nest". Explain Tagore's idea on Nationalism and Internationalism.   15

6. Explain the concept of Alienation given by Karl Marx.   15

B.A. (Honours) Examination, 2023

Semester—II (CBCS)

Subject: Economics

Course-CC-3(Introductory Macroeconomics)

Time: 3 hours

Full Marks: 60

Questions are of value as indicated in the margin

Qs. 1.   **Answer any eight questions from the following:**   2X8=16

(a)   Define an intermediate good. Why would inclusion of intermediate goods in measuring GNP involve double counting?

(b)   How do you derive Personal Income (PI) from GDP at market prices?

(c)   What problem do you face in including the Public goods in measurement of GDP? How do you avoid the problem?

(d)   What do you mean by leakages and injections in a Circular flow of income? Give examples.

(e)   If personal income is Rs. 570, personal income taxes is Rs. 90, Consumption is Rs.430, interest payments is Rs. 10 and personal saving is Rs. 40, then find the disposable income.

(f)   What is meant by GDP deflator? What is the use of it?

(g)   For a linear consumption function $C = a + bY$; $a>0$, $0<b<1$ Comment on the relationship between APC and MPC.

(h)   When does a saving function rotate clockwise or anticlockwise? When does it shift?

(i)   If MPC is greater than or equal to 1, then what problem arises in determination of equilibrium output? Show by using diagrams.

(j)   According to Keynes, why do people hold idle cash balances?

(k)   Consider a project that costs Rs. 100 today (period 0) and yields Rs. 50 in period 1 and Rs. 70 in period 2. If the rate of interest is 10 percent, find the Net Present Value (NPV).

(l)   Derive the relationship between the price of a perpetual bond (P_b) and the rate of interest (r).

(m)   When do IS and LM curves shift their position?

(n)   What were mercantilists' positions on government's foreign trade policy?

(o)   What are the basic features of classical position against the mercantilists?

Qs. 2.   **Answer any five questions from the following:**   4X5=20

(a)   What is double counting in NI accounting? How do you avoid it? Clarify with an example.

(b)   How is equilibrium output determined in a closed economy without government? Explain with appropriate diagrams.

(c)   In case of a simple Keynesian model without government, if investment consists of both autonomous part and induced part and if MPC is 0.7 and marginal propensity to invest is 0.8, do you think that the model is stable? Justify.

(d)   Show that "Balanced Budget Multiplier" (BBM) is unity.

(e)   What is "Paradox of Thrift". Explain the concept while (i) Investment is autonomous (ii) investment is a positive function of income.

(f)   Explain the four measures of money supply: M_1, M_2, M_3, M_4.

(g)   Explain the process of credit creation by the commercial banks.

(h)   Explain Keynesian Liquidity trap. Which policy do you suggest would be effective in expanding Output and Employment under this system?

(i)   Write a note on crowding out effect. When will the effect be maximum?

(j)   Write a note on " Loanable Funds" theory of interest

Qs. 3.   **Answer any two questions from the following:**   12X2=24

(a)   (i)   If $C = 20 + 0.9 Y$ and $I_0 = 70$, what is the level of unplanned inventory accumulation or decumulation at $Y= 850$. Use diagram.
      (ii)   For a three sector economy, derive the government expenditure multiplier and show the process of output adjustments in infinite rounds.   6+6

(b)   i)   Derive the equation of the IS curve for an economy without government and interpret the slope of the curve.
      ii)   Derive the equation of the LM curve and interpret the slope of the curve.   6+6

(c)   (i)   Interpret the points which are not on IS and LM curves in an IS-LM framework.
      (ii)   Show the effects of an expansionary fiscal policy in IS-LM framework and explain the transmission mechanism.   6+6

(d)   (i)   Explain the equilibrium in a Classical Labour market.
      (ii)   What are the determinants of output and employment in the classical system? What are the factors that do not affect output in such a system?   6+6

B.A. (Honours) Examination, 2023

Semester—II (CBCS)

Subject: Economics

Course-CC-4(Mathematical Methods for Economics)

Time: 3 hours

Full Marks: 60

Questions are of value as indicated in the margin

UNIT-I
Answer any two questions from the following:

15x2=30

Qs1. (i) Find x, y, z , t where $3\begin{bmatrix} x & y \\ z & t \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2t \end{bmatrix} + 4\begin{bmatrix} 4 & x+y \\ z+t & 3 \end{bmatrix}$

(ii) Suppose $A = \begin{bmatrix} 1 & 2 \\ 3 & -4 \end{bmatrix}$ and $g(x) = x^2 + 3x - 10$, then show that A is zero of the polynomial g(x).

(iii) Show that the inverse of the matrix $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ is equal to $B = \frac{1}{\det A}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$

$4 + 5 + 6 = 15$

Qs.2. (i) Suppose A is a square matrix. Write A as the sum of a symmetric and a skew-symmetric matrix.

(ii) Let A be an arbitrary 2x2 orthogonal matrix. Prove that if (a, b) is the first row of A then $a^2 + b^2 = 1$ and $A = \begin{bmatrix} a & b \\ -b & a \end{bmatrix}$ or $A = \begin{bmatrix} a & b \\ b & -a \end{bmatrix}$.

(iii) Find a 2x2 orthogonal matrix P whose first row is a multiple of (3, -4).

$5 + 5 + 5 = 15$

Qs.3. (i) Compute the Adjoint of the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 3 & 5 \\ 1 & 5 & 12 \end{bmatrix}$.

(ii) Solve the given equations by Matrix method: $3x - 2y = 4, 4x - 3y = 5$.

(iii) Is the system of equations; $x + y + z = 4, 2x + 5y - 2z = 3, x + 7y - 7z = 5$ solvable?

$6 + 5 + 4 = 15$

Qs.4. (i) Show that $\begin{vmatrix} a & b & c \\ a^2 & b^2 & c^2 \\ b+c & c+a & a+b \end{vmatrix} = (b-c)(c-a)(a-b)(a+b+c)$.

(ii) Solve the equation: $\begin{vmatrix} x+1 & -3 & 4 \\ -5 & x+2 & 2 \\ 4 & 1 & x-6 \end{vmatrix} = 0$

(iii) Solve by Cramer's rule: $x + 2y + 3z = 6, 2x + 4y + z = 7, 3x + 2y + 9z = 14$.

$5 + 5 + 5 = 15$

UNIT-II
Answer any two questions from the following:

15x2 = 30

Qs.5. Define Saddle Point. Obtain the Linear and quadratic approximations of the following function near the point (0, 0): $f(x,y) = Cosx + Sin2y$

$2+13 = 15$

Qs.6. (a)Suppose your objective function is $f(x,y) = 2x^2 + y^2$ and the constraint is $xy = 2$. Find the optimum values using Lagrange multiplier.

(b) Verify the envelop theorem in the function $f(x) = 2x^2 + 8kx + 3k^2$, where 'k' is a parameter

$8+7 = 15$

Qs.7. Suppose a consumer maximizes its utility $Q = X^\alpha Y^{1-\alpha}$ subject to her budget $M = P_x X + P_y Y$ where all symbols follow their usual meanings. Derive the maximum value function and then prove the Euler's theorem. Find the critical point(s) of the given objective function.

$7+5+3 = 15$

Qs.8. Find the critical point(s) of the following functions, and use the second partials test to obtain any local extrema or saddle point(s): $f(x,y) = 2x^2 + 6y^2 + 12x - 24y + 30$

$3+12 = 15$

B.A. (Honours) Examination, 2023
Semester—II (CBCS)
Subject: Economics
Course-GEC-2(Introductory Macroeconomics)

Time: 3 hours

Full Marks: 60

Questions are of value as indicated in the margin

Qs. 1.   Answer any eight questions from the following: 2X8=16
  (a) Distinguish between potential GDP and actual GDP.
  (b) Define capital and depreciation
  (c) Distinguish between an intermediate good and a final good with examples
  (d) How do you derive National Income (NI) from GDP at market prices?
  (e) Define Personal Income (PI). How can we derive PI from National Income(NI)
  (f) Define transfer payments. Are they included in NI?
  (g) Why is profit regarded as a residual factor income? Can profit be negative or zero?
  (h) Define autonomous and induced consumption.
  (i) Define MPC and APC.
  (j) For a linear consumption function $C = a + bY$; $a>0$, $0<b<1$ Comment on the relationship between APC and MPC.
  (k) State the main functions of the Central Bank of a country.
  (l) What are the advantages of a paper currency system?
  (m) What do you mean by Hyperinflation? What are the causes of hyperinflation?
  (n) What is Fisher effect?

Qs. 2.   Answer any five questions from the following: 4X5=20

  (a) Depict and briefly explain a three sector "Circular Flow of Income"?
  (b) Derive the saving function from a Keynesian consumption function and draw the saving curve.
  (c) What is "Paradox of Thrift"? Explain the concept.
  (d) Derive the Balanced Budget Multiplier (BBM) in an economy with lump Sum Taxes.
  (e) For a hypothetical economy where $C = 90 + .9Y$ and $I = 150$, determine the equilibrium level of income.
  (f) Discuss with examples how bad money drives out good money.
  (g) Write a note on " Credit Creation by the Commercial Banks"
  (h) Write a note on " Quantity theory of money"
  (i) Define the concepts of M_1, M_2, M_3 and M_4 in the context of money supply.

Qs. 3.   Answer any two questions from the following: 12X2=24

  (a) (i) Discuss the three methods of measuring National income.
     (ii) Discuss the problems we face in each of these methods of measurement.   6+6

  (b) (i) How is equilibrium income determined in a closed economy with government?
     (ii) Derive government expenditure multiplier in a three sector model with lump sum tax on income.
                                                                                      6+6
  (c) (i) Define inflation.
     (ii) Distinguish between Demand-pull and Cost-push inflation.
     (iii) Discuss any two measures of controlling inflation.

                                                                                      2+5+5
  (d) (i) Define money.
     (ii) Discuss the four major functions of money.
     (iii) What is "Quantity Theory of Money" (QTM)? Explain briefly the Fisher's Version of QTM.   2+5+5

B.A. (Honours) Examination-2023

Semester-II (CBCS)

Political Science

Generic Elective Course: GEC-II

(Political Theory-II)

Time: 3 Hours   Full Marks: 60

Questions are of value as indicated in the margin

A) Question 1 is compulsory and choose any two from the rest   (15x3=45)

1) "While Dialectical Materialism represents the philosophical basis of Marxism, Historical Materialism represents its empirical basis." Elaborate.   (15)

2) Examine the political philosophy of Rabindranath Tagore specifically referring to his ideas on nationalism and internationalism.   (15)

3) Discuss the Elite Theory as put forward by the traditional and modern sociologists. (15)

4) Write a note on the Civil Disobedience Movement, 1930. Examine the significance of the Quit India Movement, 1942.   (7.5+7.5)

B) Answer any three from the following: **(5x3=15)**

1) "Alienation covers the twin processes of objectification and estrangement." Examine in brief.

2) What are the conditions for the successful working of democracy?

3) Briefly discuss the Gandhian concepts of Ahimsa and Satyagraha.

4) Discuss the various dimensions of Equality in brief.