

1st Semester Examination, 2020*Time : 3 hours**Full Marks : 80*Answer any **one** Group as per your syllabusAnswer from **all** the Sections as per direction*The figures in the right-hand margin indicate marks**Candidates are required to answer in their own words as far as practicable*

GROUP— A

(MODEL SYLLABUS)**(INTRODUCTORY MICRO ECONOMICS)**

SECTION— A

1. Fill in the blanks/ Answer in one word : 1 × 12
- (a) In _____ method, the economic generalisations are derived from general to particular .
- (b) Graphs present statistical facts through lines and _____ .
- (c) Indifference curves are convex to the origin because of _____ .
- (d) When two goods are perfect complements, the shape of the indifference curve is _____ shaped.
- (e) The competitive firm shut down production in the short run at the point where price equals to _____ .
- (f) At higher wage rate when workers prefer more of leisure and less of work, the shape of supply curve is _____ to the left .
- (g) What does a shift of demand curve to the right imply ?
- (h) Whose substitution effect is explained by method of cost difference ?
- (i) What will be the value of price elasticity at the mid-point of a straight line demand curve ?
- (j) What type of cost is the next best alternative foregone ?
- (k) When price consumption curve is backward bending, what shape does the demand curve take ?

(Turn Over)

(l) Who introduced the concept of Quasi-rent ?

SECTION– B

2. Answer any *eight* questions within *two to three* sentences each : 2 × 8

(a) Write down two principles that describe how people make decisions ?

(b) What are the two important uses of graphs in Economics ?

(c) Why do economists disagree on economic issues ?

(d) What is cross elasticity of demand ?

(e) How does interest rate affect household saving ?

(f) What is Income effect ?

(g) Define marginal cost.

(h) What are economics of scale ?

(i) List down the causes for shift in labour demand curve .

(j) What is Marginal Product of labour ?

SECTION– C

3. Answer any *eight* questions within *75* words each : 3 × 8

(a) State the reasons for downward slope of demand curve.

(b) Write down the determinants of price elasticity of supply.

(c) What does the 'Invisible hand' of the market place do ?

(d) Give any three examples of trade-offs you face in life.

(e) Briefly describe the relationship between average cost and marginal cost.

(f) When does a firm decide to exit the market in the long run in a competitive market ?.

(g) Why is LAC curve called envelope curve ?

(h) Is trade-off possible between work and leisure ?

(i) State the reasons for shifts in input demand curve.

(j) Draw the demand curve for a Giffen Commodity.

(3)

SECTION – D

Answer the following each within 500 words:

7 × 4

4. Discuss the role of assumptions in the study of Economics.

Or

Define price elasticity of demand. How is it measured ?

5. Explain consumer's equilibrium in terms of indifference curve analysis.

Or

Decompose price effect into income effect and substitution effect.

6. "Long run average cost curve is U-shaped but flatter than the short run average cost curve"—Explain.

Or

Derive the short run supply curve of a perfectly competitive firm. Explain how it behaves under increasing, decreasing and constant cost conditions.

7. Derive the demand for labour in a competitive labour market.

Or

Discuss how equilibrium is achieved in market for land.

GROUP – B

(OLD SYLLABUS)

(INTRODUCTORY MICRO ECONOMICS)

SECTION – A

1. Answer the following questions :

2 × 8

(a) The economic problem is essentially the problem of choice. Discuss.

(b) What is Micro economics ?

(c) What is demand schedule ?

(d) What do you understand by income effect ?

(4)

- (e) Explain the nature of average fixed cost curve.
- (f) Define monopoly.
- (g) What is consumer's surplus ?
- (h) What is the nature of demand for labour ?

SECTION – B

Answer **all** questions :

16 × 4

2. Explain briefly the central problem of an economy.

Or

Discuss the essential elements of basic competitive model.

3. Why does the demand curve usually slope downward to the right ? Are there any exceptions to this ?

Or

Discuss the properties of indifference curves.

4. Account for the U-shape of the long run average cost curve.

Or

Discuss the equilibrium of firm under monopoly.

5. Explain how reward for labour is determined under competitive labour market.

Or

Write two short notes on :

- (a) Input demand curve
- (b) Labour market and public policy.

1st Semester Examination, 2020

Time : 3 hours

Full Marks : 80

Answer any **one** Group as per your Syllabus.

Answer from all the sections as per direction.

The figures in the right-hand margin indicate marks.

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GROUP—A

(MODEL SYLLABUS)

(MATHEMATICAL METHODS FOR ECONOMICS-I)

PART-I

1. Answer all questions :

1 × 12

- (i) What is the Cartesian product of Set A and Set B if the Set $A = \{1, 2\}$ and Set $B = \{a, b\}$?
- (ii) Which type of Set $A \cap B$ is if $A = \{1, 2, 3\}$ $B = \{4, 5, 6\}$?
- (iii) A number that can not be expressed in the form of a fraction or integers is called——.
- (iv) Graph of a quadratic function is a——.
- (v) What type of function is $y = \frac{f(x)}{g(x)}$?
- (vi) The limiting value of $\lim_{x \rightarrow \infty} \left(x + \frac{1}{x}\right)^x$ is——.
- (vii) If $y = x - 1$ at $x = 1$, then the function is continuous at $x =$ ——.
- (viii) Let $y = ax^2 + bx + c$, $\therefore \frac{dy}{dx} =$ ——.

(ix) If $y = x e^x$, then $\frac{dy}{dx} = \text{_____}$.

(x) The partial derivative of a function, $z = 2x + 5y + 6xy$ with respect to x is _____.

(xi) Inverse of a matrix can be expressed as _____.

(xii) The cofactor of 3 in $\begin{vmatrix} 1 & 3 & 1 \\ 2 & 9 & 7 \\ -1 & 0 & 2 \end{vmatrix}$ is _____.

PART-II

2. Answer any *eight* of the following :

2 × 8

(i) What is complement of a set ?

(ii) Evaluate $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x^3 - 27}$.

(iii) Show that $f(x) = 3x + 5$ is continuous at $x = 2$.

(iv) Differentiate $x^3 - 3x^2 + 3x + \frac{3}{7}$ with respect to x .

(v) Find $\frac{dy}{dx}$ if $y = \sqrt{1+x^2}$.

(vi) If the demand function is given by $p = 10 + 2x + 3x^2$, where p is the price and x is the quantity sold, then find MR.

(vii) Given demand function $q_1 = 60 - 3p_1 - 6p_2$, find an expression for the partial elasticity of demand with respect to p_1 .

(viii) Find the minor of element 8 in the determinant.

$$\Delta = \begin{vmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$$

(ix) Define Range of a function.

(x) What is Transpose of matrices ?

PART–III

3. Answer any *eight* of the following :

3 × 8

(i) If $A = \{1, 3\}$, $B = \{1, 2, 3, 4\}$ and $C = \{1, 2, 3, 4, 5, 6\}$, verify that
 $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

(ii) Find $\lim_{x \rightarrow \infty} \frac{x^2 + 1}{x^2 - 1}$.

(iii) Find $\frac{dy}{dx}$ if $y = \frac{4x + 3}{2x^2 + 3x}$.

(iv) Define Relation. Distinguish between Relation and function.

(v) Find the partial derivative of the following function $Z = (5x^2 - 4y)(2x + 7y^3)$

(vi) Find AC and MC if total cost function is $C = 4Q - Q^2 + 2Q^3$.

(vii) Examine whether the function $y = \frac{1 - x^2}{1 - x}$ is continuous at $x = 1$.

(viii) Distinguish between exponential and logarithmic function.

(ix) Find the value of determinant $\begin{vmatrix} 3 & -5 & 8 \\ 6 & -4 & -3 \\ 4 & 2 & 0 \end{vmatrix}$.

(x) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 2 & -3 \\ -4 & 0 \end{bmatrix}$ show that $7(A + B) = 7A + 7B$.

PART–IV

Answer *all* questions :

7 × 4

4. (a) In a Economics Honours class of 96 students, only 50 play cricket and 32 play cricket not football.

- (i) Determine the number of students who play both cricket and football.
(ii) Determine the number of students who play football but not cricket.

Or

(b) A function is defined by $f(x) = \frac{3x+6}{x-2}$:

- (i) Find the domain of function.
(ii) Show that 5 is in the range.

5. (a) If the average revenue function is given by $p = a - bX$, show that the marginal revenue curve is downward sloping.

Or

(b) Find $\frac{dy}{dx}$, when $y = x^x$.

6. (a) Given the demand function $p = \frac{20}{x+1}$, find the elasticity of demand when $p = 5$.

Or

(b) Give geometric interpretation of Partial derivatives.

7. Define determinant. Discuss its properties.

Or

Solve the system of equations using matrix inversion method.

$$x + y = 3$$

$$y + z = 5$$

$$z + x = 4$$

GROUP—B
(OLD SYLLABUS)
(MATHEMATICAL METHODS FOR ECONOMICS-I)

SECTION—A

1. Answer the following questions :

2 × 8

(a) Explain disjoint sets.

(b) Find $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3}$.

(c) If $A = \begin{bmatrix} 2 & 0 \\ -5 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} -3 & 6 \\ 4 & 1 \end{bmatrix}$ then find $A + B$.

(d) Find value of the determinant $\begin{vmatrix} 3 & 4 \\ 10 & -2 \end{vmatrix}$.

(e) If $y = (\sqrt[3]{x})^4$, find $\frac{dy}{dx}$.

(f) Find f_x and f_{xy} for the following function

$$z = \frac{4}{3}x^3 + y^2 - 4x + 8y$$

(g) Evaluate $\int \left(e^x + \frac{1}{x^3} \right) dx$.

(h) What is cross partial elasticity of demand.

SECTION-B

Answer all questions :

16 × 4

2. If A, B, C are three sets, show that

(i) $A \times B = (A + B) \cap (B \times A)$

(ii) $A \times (B \cup C) = (A \times B) \cup (A \times C)$

(iii) $A \times (B \cap C) = (A \times B) \cap (A \times C)$

Or

(i) $\lim_{x \rightarrow -1} \frac{x^2 + 4x + 3}{x^2 - 7x - 8}$

(ii) Find the limit of the following function

$$\lim_{x \rightarrow 0} \frac{\sqrt{2-x} - \sqrt{2+x}}{x}$$

3. Find $\frac{dy}{dx}$ for the following functions :

(a) $y = (1 - \sqrt{x})(1 + \sqrt{x})$

(b) $y = \frac{x^2 + 4}{x + 2}$

Or

(a) Evaluate $\int \frac{x dx}{2x^2 + 3}$.

(b) The marginal cost function for some product is $(1 + x + 6x^2)$ where x is the output. Find the total cost function if the fixed cost is Rs. 100 when the output is zero.

4. Following are the demand functions for two commodities x_1 and x_2 :

$$x_1 = p_1^{-1.7} p_2^{0.8} \text{ and } x_2 = p_1^{0.5} p_2^{-0.2}$$

Determine whether the commodities are complementary or competitive; also find four elasticities of demand.

Or

The total revenue (R) and total cost (C) functions of a firm are given by

$$R = 300 - Q^2, \quad C = 20 + 4Q$$

Where Q is the output. Find the equilibrium output of the firm.

5. Calculate the inverse of matrix $A = \begin{bmatrix} 2 & -2 & 3 \\ 1 & 0 & -3 \\ 3 & 4 & 0 \end{bmatrix}$.

Or

Solve the following using Cramer's rule

$$x - 2y + 3z = 1$$

$$3x - y + 4z = 3$$

$$2x + y - 2z = -1$$

1st Semester Examination, 2020

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Full Marks : 80

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Answer from **all** the Sections as per direction

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GROUP— A

(MODEL SYLLABUS)

(INDIAN ECONOMY)

SECTION— A

1. Fill in the blanks : 1 × 12
- (a) _____ industry received major set back during the colonial rule in India.
- (b) National Population Policy, 2000 targeted to achieve zero growth rate of population by _____ A.D .
- (c) A situation in which a person gets work for less time or below his skills in called _____ .
- (d) Under MGNREGS, _____ days of work are guaranteed to rural poor.
- (e) When an owner of the land does not cultivate his land himself but gets it cultivated by others on rental basis, such system is called _____ .
- (f) Absence of proper grading and standardisation of agricultural products in India is a defect of its _____.
- (g) In india, the scheme of Micro finance is extended through _____ .
- (h) _____ five year plan in India had a long term objective of rapid industrialisation.
- (i) Tiny sector was introduced in India in the Industrial policy, _____ .
- (j) The fastest growing sector in the Indian economy is _____ sector.
- (k) Pattern of growth experienced in Indian economy during post liberalisation period is termed as _____ growth.

(Turn Over)

(l) Make in India programme was launched in year _____ .

SECTION– B

2. Answer any *eight* of the following in two or three sentences : 2 × 8

- (a) Mention two features to show that India is a developing economy.
- (b) What have been the objectives of land reforms in India ?
- (c) Point-out the main causes of India's agricultural stagnation during the colonial period.
- (d) What is Sex-composition of population ?
- (e) Name two distinguishing features of 1956 industrial policy.
- (f) What is Industrial sickness?
- (g) Why did India opt for import substituting industrialisation in the earlier period of planning ?
- (h) Mention any two problems of agricultural credit in India.
- (i) Name the constituents of service sector in India.
- (j) Mention any two factors determining the growth of service sector in India.

SECTION– C

3. Answer any *eight* of the following within 75 words each : 3 × 8

- (a) Point out various forms of colonial exploitation of India.
- (b) Write down the effects of population explosion in India.
- (c) Mention the main features of National population policy, 1976.
- (d) State the key features of MGNREGA, 2005.
- (e) What are the steps taken by Govt. of India to correct regional imbalances ?
- (f) Mention the unfavourable impacts of Green revolution in India.
- (g) What are the main difficulties in the way of consolidation of landholdings in India ?
- (h) Why institutional sources of credit is superior to non-institutional sources of credit ?
- (i) State the problems of industrial development in India.

(3)

(j) Point out the reasons for spectacular growth of ICT sector in India.

SECTION – D

Answer the following each within 500 words:

7 × 4

4. What is occupational structure ? Explain how the occupational structure has been changed in India since independence.

Or

Examine the effectiveness of various employment generation programmes of Government of India in reducing unemployment in our country.

5. Discuss the importance of agriculture in Indian economy.

Or

What are the problems of agricultural marketing in India ? How can they be solved ?

6. Critically examine the New Industrial policy, 1991 of Government of India.

Or

Analyse the problems of small-scale industries in India. Suggest measures to overcome them.

7. Explain the Government policy for the spread of ICT and IT in India. What have been the impacts of the IT sector on Indian economy.

Or

Discuss the relative importance of service sector in Indian economy.

GROUP – B

(OLD SYLLABUS)

(INDIAN ECONOMY-I)

SECTION – A

1. Answer *all* the following questions :

2 × 8

(a) Mention the nature of exports of India during British period.

(b) What are the adverse consequences of brain drain ?

- (c) What is indicative economic planning ?
- (d) Mention the broad objectives of Indian planning.
- (e) Give two reasons of high birth rate in India.
- (f) What do you mean by inequality ?
- (g) Define poverty line.
- (h) What are the different types of unemployment ?

SECTION – B

Answer **all** questions :

16 × 4

2. Give a brief note on exploitation of indian economy during British rule.

Or

Discuss the organisation of villages and towns during British period.

3. Explain the state of Indian Economy at the time of independence.

Or

Discuss the stagnation of Indian industries in British period.

4. What are the broad objectives of Indian planning ? How far they have been achieved ?

Or

Write short notes on :

- (i) Important features of India's plans.
- (ii) The planning process in India.

5. Discuss the poverty alleviation programme of Government of India.

Or

What do you mean by population explosion ? Explain the causes of population explosion in India.

Total Pages—5

AHECO 02

2018

(1st Semester)

Time : 3 hours

Full Marks : 60

Answer from both the Sections as directed

The figures in the right-hand margin indicate marks

**(MATHEMATICAL METHODS FOR
ECONOMICS-I)**

SECTION—A

1. Answer the following questions : 2 × 6
- (a) Define Disjoint sets.
 - (b) Define complement sets.
 - (c) What is the difference between differentiation and derivative ?

(Turn Over)

(2)

- (d) Define continuity of a function.
- (e) Find the first order partial derivatives of $u = x^3 + y^3 + 3xy$ with respect to x and y .
- (f) What is an Identity Matrix ?

SECTION - B

Answer all questions : 12 x 4

2. (a) (i) Given $A = \{4, 5, 6\}$, $B = \{3, 4, 5, 6\}$ and $C = \{2, 3, 6\}$ verify $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ and $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

- (ii) Define domain and range of a function. If the domain of the function $Y = 5 + 3x$ is the set $\{X: 1 \leq X \leq 4\}$, find the range of the function.

Or

- (b) (i) Define rational function. What are the economic applications of the function

$$Y = \frac{a}{x} \text{ ? Graph of the function } Y = \frac{a}{x}, a > 0.$$

(3)

(ii) Find

$$\lim_{x \rightarrow 3} \frac{x^2 - 9}{x^2 - 2x - 3}$$

3. (a) (i) Define continuity of a function and

show that the function $f(x) = \frac{x^3 - 8}{x - 2}$ is continuous for all values of x except at $x = 2$.

- (ii) Evaluate $\int \frac{x}{x^2 + x - 2} dx$.

Or

- (b) A demand function is given by $p = 10 + 2x + 3x^2$ where p is the price and x is quantity sold.

- (i) Find Total Revenue, Marginal Revenue and Average Revenue.

- (ii) Show that $MR = p + x \cdot \frac{dp}{dx}$.

(5)

5. (a) Define a determinant and discuss the properties of a determinant.

Or

- (b) Solve the following equation system by matrix inversion method :

$$x + y = 3$$

$$x + z = 5$$

$$z + x = 4$$

(4)

4. (a) (i) Given $Z = \log(x^2 + y^2)$. Find

$$\frac{\partial z}{\partial x} \quad \text{and} \quad \frac{\partial z}{\partial y}$$

- (ii) If $U = \frac{xy}{x+y}$, verify that

$$x \cdot \frac{\partial u}{\partial x} + y \cdot \frac{\partial u}{\partial y} = U$$

Or

- (b) A demand function is given by

$$q_1 = 60 - 3p_1 - 6p_2$$

- (i) Find an expression for the partial elasticity of demand with respect to P_1 and P_2 .

- (ii) What are the values of direct and cross partial elasticities when $P_1 = S$ and $P_2 = S$.

2017

INTRODUCTORY MICROECONOMICS

Time : 3 Hours]

[Full Marks : 80

Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

SECTION-A

1. Answer all questions :

2×8

- (a) What is Economics ?
- (b) Define Rationing.
- (c) What is Market Demand Scheduled ?
- (d) Define Indifference Curve.
- (e) What is Imperfect Competition ?
- (f) Define Monopoly.
- (g) Define Marginal Productivity of Labour.
- (h) What is Marginal Revenue ?

SECTION-B

Answer all questions :

16×4

2. (a) Define and discuss the scope and methods of Economics.

OR

6_BAM_2 (2)

(Turn Over)

(2)

(b) What are economic problems? Explain how it can be addressed?

3. (a) Explain the different properties of IC with suitable diagram.

OR

(b) What is Substitution Effect? Explain both Slutsky and Hicksian substitution effect with suitable diagram.

4. (a) Explain cost and output determination by monopoly under both short and long run.

OR

(b) Explain the Government Policies towards competition.

5. (a) Critically explain Marginal Productivity Theory of Labour.

OR

(b) Write a note on Labour Markets and Public Policy.

2017

**MATHEMATICAL METHODS FOR
ECONOMICS**

Time : 3 Hours]

[Full Marks : 80

Answer from both the Sections as directed. The figures in the right-hand margin indicate marks.

SECTION-A

1. Answer all questions :

2×8

- (a) If $A = \{1, 2\}$, $B = \{3, 4\}$ and $\Omega = \{1, 2, 3, 4\}$, find $(A \cup B)'$ and $(A \cap B)'$.
- (b) Express $y = \log x$ in a graph.
- (c) If Total Revenue (TR) is PQ, then find Average and Marginal Revenue.
- (d) Find dy/dx for $y = a \log x$.
- (e) Given $q = a + bp$, prove that e_p is a constant.
- (f) For $y = ax + bz$, find $\frac{\partial y}{\partial x}$ and $\frac{\partial y}{\partial z}$.
- (g) Give the specification of an identity matrix.

(h) Given $A = \begin{vmatrix} a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \\ a_3 & b_3 & c_3 \end{vmatrix}$, find transpose of

A.

SECTION-B

Answer all questions :

2. (a) Distinguish between relation and function.
Discuss about the various types of functions used in economic analysis. 16

OR

(b) Find:

(i) $\lim_{x \rightarrow \infty} (2x^2 + 1)^{\frac{1}{3}} = 0$

(ii) $\lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x} = 1$

(iii) $\lim_{x \rightarrow 0} \frac{\sqrt{x+a} - \sqrt{x}}{\sqrt{a}} = 0$

(iv) $f(x) = \frac{2-x}{2-\sqrt{2x}}$, $x \neq 2$

is not continuous at $x = 2$.

4x4

3. (a) Find $\frac{dy}{dx}$:

4x4

(i) $y = a^{x^2}$

(ii) $y = \sqrt{\frac{1-x}{1+x}}$

(iii) $y = 3at$ and $x = at^3$

(iv) $y = e^{3x} + \sqrt{x^2 - 4} + 5$

OR

(b) Integrate the following :

4x4

(i) $\int x \cos x^2 dx$

(ii) $\int a^x \left(1 + \frac{a^{-x}}{x^5} \right) dx$

(iii) $\int x(1+x)(1-x) dx$

(iv) $\int_0^{\infty} x e^{-x^2} dx$

4. (a) Given demand functions for two commodities x_1 and x_2 as $x_1 = p_1^{-1.7} p_2^{0.8}$ and $x_2 = p_1^{0.5} p_2^{-0.2}$, define the nature of the commodities and find the partial elasticities.

16

OR

(4)

(b) Given

$$x_1 = p_1^{-a_{11}} e^{a_{12} p_2 + a_1}, \quad x_2 = p_2^{-a_{22}} e^{a_{21} p_1 + a_2}$$

show that direct price elasticities of demand are independent of the price while cross price elasticities are determined in sign by a_{12} and a_{21} . 16

5. (a) What is a determinant? Discuss the properties of a determinant. 16

OR

- (b) Find the inverse of the following matrix : 16

$$A = \begin{pmatrix} 5 & 1 & 1 \\ 0 & 2 & 2 \\ 3 & 1 & 4 \end{pmatrix}$$

Total Pages—3

AGECO 01

2018

(1st Semester)

Time : 3 hours

Full Marks : 60

Answer from both the Sections as per direction

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*Candidates are required to answer in their own words
as far as practicable*

(INDIAN ECONOMY)

SECTION – A

I. Answer the following questions : 2×6

(a) What do you mean by organisation of villages ?

(b) What is the meaning of colonization ?

(c) Write down any two pros and cons of the theory of drains.

(Turn Over)

(2)

- (d) What is economic planning ?
- (e) What is population explosion ?
- (f) Define unemployment.

SECTION - B

Answer all questions : 12 x 4

2. (a) Analyse the economic scenario of India in the British period.

Or

(b) Discuss the organisation and structure of industries and handicrafts.

3. (a) Discuss the economic conditions of India at the time of independence.

(b) Write a note on stagnation of Indian Industries.

4. (a) Explain the important features of Indian plans.

(3)

Or

(b) Examine targets of various five year plans in India.

5. (a) Examine the demographic features of Indian economy.

Or

(b) What are the causes of unemployment ?