

BA (Honours) Examination, 2023

Semester I (NEP)

Economics

Course: MJEC01

Introductory Microeconomics

Time: 3 hours

Full Marks: 80

Questions are of value as indicated in the margin

Answer **two** questions from each group

Group A

Answer **Question no 1 and any one** from the rest of the following questions

1. a. A person likes soft drinks but does not distinguish between brands A and B.
 - (i) Draw his indifference curves showing brands A and B on two axes.
 - (ii) Draw his indifference curves showing soft drinks and other goods on two axes.
- b. Show that inferiority of a good is necessary for its being Giffen.
- c. Explain the following statement. The distance between two indifference curves is immaterial; the only relevant issue is which is higher and which is lower.

(5+5)+5+5

2. a. What does the term "ceteris paribus" mean? How does it relate to the distinction between a change in quantity demanded and change in demand?
- b. If the equation for a market demand curve is $Q_d = 10 - 4P$, and the equation for the market supply curve is $Q_s = 4P$, find the market equilibrium price and quantity. Verify your answer graphically.

10+10

3. a. Explain why economists usually oppose controls on prices?
- b. Explain Non-binding price ceiling in detail.
- c. Why does a reduction in the price of a good increase consumer surplus?

6+8+6

Group B

Answer any **two** questions from the following:

4. (a) What is a production function? How does a long run production function differ from a short run production function?

(b) Assuming that prices of factors of production are given, show how a firm minimises her cost to produce a certain level of output defined by an iso-quant.

(c) If a firm's average cost curve is U-shaped, why does its average variable cost curve achieve its minimum at a lower level of output than the average total cost curve.

(d) Why is the marginal product of labour likely to increase initially in the short run as more of the variable input is hired?

(2+3)+5+5+5

5. (a) Derive the short-run supply curve of a perfectly competitive firm. How do you get short run industry supply curve?

(b) Explain why a competitive firm cannot make excess profit in long run equilibrium. How do you define normal profit?

10+10

6. (a) A monopolist is producing at a point at which marginal cost exceeds marginal revenue. How should it adjust its output to increase profit?

(b) Why is there no unique supply curve under conditions of monopoly?

(c) Why is there a social cost to monopoly power? If the gains to producers from monopoly power could be redistributed to consumers, would the social cost of monopoly power be eliminated? Explain briefly.

5+7+8

7. Why is demand for an input called derived demand? Derive an individual Firm's demand curve for a variable input. Do you agree with the view that "the supply curve of a factor such as labour need not be upward-sloping"?

3+7+10

B.A. (Honours) Examination, 2023
Semester - I (NEP)
Subject: Economics
Course: MJEC02
(Mathematical Methods for Economics I)

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin
Answer any five (05) of the following questions

1. (a) Show that if $f(x)$ is differentiable at $x = x_0$, then $f(x)$ is also continuous at $x = x_0$.
(b) If a function is continuous over the closed interval $[a, b]$ and differentiable over the open interval (a, b) , then prove that there exists at least one point $c \in (a, b)$ such that $f'(c) = \frac{f(b) - f(a)}{b - a}$.

7+9 = 16
2. (a) Prove that $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$.
(b) Using the Cauchy's theorem on limit, prove that: $\lim_{n \rightarrow \infty} \left(\frac{1}{n^2} + \frac{1}{(n+1)^2} + \dots + \frac{1}{(2n)^2} \right) = 0$.

8+8 = 16
3. (a) Find the 2nd degree Taylor Polynomial of $y = \log x$ at $x = 1$.
(b) Using the first principle of differentiation, derive $\frac{dy}{dx}$ when $y = x^2 + 1$.

8+8 = 16
4. (a) Find the critical point(s) and the maximum or minimum value of the function $y = x^2 + 2x + 1$.
(b) A rectangular garden has to be built using a brick wall as one side and wire fencing for the other three sides. Given 100 meters of wire fencing, determine the dimensions that creates a garden of maximum area. What is the maximum area?

6+10 = 10
5. (a) Graphically and mathematically interpret a convex combination of two points on a function.
(b) Differentiate the function $y = \log x^2$ with respect to x , using first principle of differentiation.

7+9 = 16
6. (a) Derive $\frac{dy}{dx}$ from the equations: (i) $x^3 + y^3 + 3x^2y + 3xy^2 = 0$; (ii) $y = 5x^2 - e^y$
(b) Verify whether the functions satisfy the Rolle's theorem:
(i) $f(x) = x^2 + 2x$, over $[-2, 0]$
(ii) $f(x) = 2x^2 - 8x + 6$, over $[1, 3]$

8+8 = 16
7. (a) Show that the statement $P \rightarrow Q$ is equivalent to the statement Q or Not P .
(b) What is wrong with the following argument?
Tom cats are cats.
Cats are species.
Tom cats are species.
(c) Which of the following statements are true (for all sets A , B and C)
(i) If $A \in B$ and $B \subset C$ then $A \in C$.
(ii) If $A \in B$ and $B \subset C$ then $A \subset C$.
(iii) Prove that $A \cap (B - C) \subset A - (B \cap C)$

4+4+4+4 = 16

8. (a) Briefly explain (with diagram) the concept of vector addition and scalar multiplication.
 (b) Define dot product. Let $U = (1, -2, 3)$, $V = (4, 5, -1)$ and $W = (2, 7, 4)$ be the three vectors in R^3 , then find which pair of vectors are orthogonal to each other.
 (c) For a rectangular $2' \times 3' \times 4'$ box, find the angle that the longest diagonal makes with the $4'$ side.
 (d) Define a unit vector. For a vector $U = (-1, 2, -3)$, find a vector of length $2/\sqrt{3}$ which points in the opposite direction.

$$4+4+4+4 = 16$$

9. (a) Define parametric representation of a line with diagram.
 (b) Transform the following parameterized equation in to the form: $x_2 = mx_1 + b$, for $x_1 = 3$, $x_2 = 5+t$.
 (c) Transform $2x_2 = 3x_1 + 5$ into its parametric form.
 (d) Draw a plane, and show the path you would traverse, were you to start at $(-1, 3)$ and then displace yourself first by vector $(1, -3)$ and then by vector $(-1, -3)$.
 (e) Write the equation of the plane through the point $(3, 4, 5)$ with normal vector $(6, 7, 8)$.

$$3+3+3+4+3 = 16$$

10. (a) State the conditions for a system of two non-degenerate linear equations in two unknowns have (i) one solution (ii) no solution (iii) infinite number of solutions with diagrams.

(b) $L_1: x - 3y - 2z = 6$; $L_2: 2x - 4y - 3z = 8$; $L_3: -3x + 6y + 8z = -5$

For the above system, find the solution by Gaussian forward elimination and backward substitution method.

$$8+8 = 16$$

Ref. No.: VB/EXAM/REG/02/UGNEP/Programme in Economics/Sem-I/33697/2023

B.A. Examination, 2023
SEMESTER-I
Subject: Economics (Minor) under NEP
Course: MNEC01 (Introductory Microeconomics)

Time: 3 hours

Attempt any FOUR from the following questions

Full Marks: 80

(4X20 = 80 Marks)

1. (a) Distinguish between VMP_L and MRP_L . Are they the same in competitive markets?
(b) How is monopolistic exploitation different from monopsonistic exploitation? Explain
(c) Can trade unions address the problem of monopolistic exploitation and monopsonistic exploitation? Justify your answer. (8+8+4=20)
2. (a) What are the assumptions of a perfectly competitive market?
(b) Explain the short-run and long-run equilibrium of a firm in a perfectly competitive market. (8+12=20)
3. (a) Compare and contrast between perfect competition, monopoly and monopolistic competition.
(b) Which market according to you is most suitable to explain the consumer goods industry? (15+5)
4. (a) With the help of income and substitution effect, explain the choice between work effort and leisure.
(b) In this context, explain the backward bending labour supply curve. (10+10=20)
5. (a) What are the ten fundamental principles of economics?
(b) Explain any four of the principles of economics (10+10=20)
6. (a) Explain, how a monopolist maximize his/her profits.
(b) What is price discrimination and what are its types? Explain them. (8+12=20)
7. (a) Explain the law of demand and law of supply with the help of a diagram.
(b) How do prices in an economic system ensure the allocation of resources? Explain.
(c) How does the incidence of indirect taxes cause deadweight loss to the economy? (4+8+8)
8. (a) What are the properties of the indifference curve?
(b) With the help of the indifference curve (IC) and the budget line (BL), explain how the optimum choice between two goods (X and Y) is made.
(c) How is the Giffen good defined in terms of substitution effect and income effect? Explain. (4+8+8=20)

Undergraduate Examination-2023

Semester-I

MNPS01 (NEP)

Subject: Political Science

(Political Theory-I)

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin

Question 1 is compulsory and choose any three from the rest (20x4=80)

- 1) State is an instrument of class exploitation- Explain. How does the Marxist concept of 'equality' differ from the liberal concept of 'equality'? (10+10=20)
- 2) Briefly describe Plato and Aristotle's theories of Justice. Mention the basic tenets of liberalism. (15+5=20)
- 3) What is "State of Nature"? Referring to the idea of Social Contract, elucidate the Mechanistic theory of State. (5+15=20)
- 4) Freedom is the quality of human being and a condition of human being-Explain the concept of freedom in the light of the above statement. Define evolutionary socialism and revolutionary socialism. (15+5=20)
- 5) Write a note on the nature of law. What are the sources of law? (12+8=20)
- 6) What do you understand by state as a natural institution and state as an ethical institution? Discuss in brief the theories of natural, moral and legal rights. (10+10=20)

B.A. (Honours) Examination, 2023

Semester-I

Economics

Course: SEEC01 (NEP)

(Statistical Methods - I)

Time: Three Hours

Full Marks: 60

Questions are of value as indicated in the margin

Answer any six questions

1. (a) Explain the following with suitable examples:

(i) Variables and attributes

(ii) Continuous and discrete variables.

(b) Following are the weights of 20 apples (in gm). Construct a frequency table with the help of tally marks using class intervals (in grams) as (61-80), (81-100), (101-120), (121-140) and (141-160).

130, 62, 145, 118, 125, 76, 151, 142, 110, 98
95, 116, 100, 103, 71 85, 80, 122, 132, 95

6+4=10

2. (a) Distinguish between class limits and class boundaries in the context of a grouped frequency distribution. How class boundaries are calculated from class limits?

(b) For the following frequency distribution, calculate the class boundaries, class widths and frequency densities corresponding to the five classes

Class	10 - 19	20 - 29	30 - 49	50 - 79	80 - 89
Frequency	15	20	30	23	12

4+6=10

3. (a) What are the 'less than' and 'greater than' type cumulative frequencies? What is 'ogive'? Using the frequency table given in question 2(b) above, calculate the cumulative frequencies and draw the two ogives.

(b) What are 'quartiles'? How do you calculate the quartiles for a simple frequency distribution?

6+4=10

4. (a) Define Arithmetic Mean (A.M.) of a set of observations x_1, x_2, \dots, x_n . How would your answer change if these values are associated with frequencies f_1, f_2, \dots, f_n respectively? How would you calculate A.M. for a grouped frequency distribution?

(b) Can you think of situation when A.M. cannot be calculated for a grouped frequency distribution? What can be an alternative measure of central tendency in such situations?

(c) The A.M. of the following frequency distribution is known to be 67.45 inches. Calculate the missing frequency (f_3).

Height (inches)	60 - 62	63 - 65	66 - 68	69 - 71	72 - 74
Frequency	15	54	f_3	81	24

3+2+5=10

(.....continued)

5. (a) Define Geometric Mean (G.M.) and Harmonic mean (H.M.) for a set of observations x_1, x_2, \dots, x_n with frequencies f_1, f_2, \dots, f_n respectively. When are they considered as better measures of central tendency compared to A.M.? Give examples.

(b) Out of the total workforce in a coal mine, 50 percent of workers perform their duty underground while the rest works above at the ground level. Workers at ground level are paid Rs 20,000 per month. But those who work underground get 20 percent additional salary as their work is associated with higher risk. What is the mean salary per month in that coal mine? 6+4=10

6. (a) The marks (out of 100) obtained by 7 students in an examination are 29, 32, 33, 37, 41, 45 and 96. Find the average marks using a suitable form of average. Give reasons for your choice.

(b) A shoe dealer has the following sale statistics of a particular model during a month:

Shoe size	4	5	6	7	8	9	10
Number of pairs sold	2	5	7	20	35	10	1

What should be an appropriate measure of central tendency in this context?

(c) Does 'mode' always exist for a frequency distribution? Explain.

(d) How would you calculate mode for a grouped frequency distribution? 3+2+2+3=10

7 (a) For a set of observations x_1, x_2, \dots, x_n with frequencies f_1, f_2, \dots, f_n respectively, define the alternative absolute measures of dispersion.

(b) Why Quartile Deviation is a better measure of dispersion compared to Range?

(c) For a frequency distribution with open ended classes, which absolute measure of dispersion can you use?

(d) What is Coefficient of Variation? Why is it a 'relative measure' of dispersion? 4+2+2+2=10

8. (a) Define Mean Absolute Deviation. For the set of observations 31, 33, 34, 36, 37, 39, 40, calculate the mean deviation about their median.

(b) If x_1, x_2, \dots, x_n is a set of observations with frequencies f_1, f_2, \dots, f_n , and $y_i = x_i - 10$, then show that standard deviations of x and y are the same. 5+5=10

Four Year Undergraduate Examination (NEP) 2024

Semester - I

Subject AECC / MIL (Bengali)

Course: AECC BENG01

(For Regular & Back Candidates)

জনপ্রিয় সাহিত্য

প্রশ্নের মান দক্ষিণ প্রান্তে উল্লিখিত

সময়: ২ ঘন্টা

পূর্ণমান: ৪০

যে-কোনো দুটি প্রশ্নের উত্তর দাও:

২×১০ = ২০

- ১। হাস্যরস পরিবেশনের ক্ষেত্রে 'লক্ষ্মণের শক্তিশেল'-এর বৈশিষ্ট্য ব্যাখ্যা করো।
- ২। অ্যাডভেঞ্চারের কাহিনি হিসেবে 'যকের ধন'-এর গুরুত্ব বিচার করো।
- ৩। 'ভয়ংকর সুন্দর' উপন্যাসে সন্তুর কিশোর মনের অভিব্যক্তি কীভাবে ধরা পড়েছে আলোচনা করো।
- ৪। মনোজদের বাড়ির সদস্যদের সংক্ষিপ্ত পরিচয় দিয়ে তাদের বাড়িকে কেন অদ্ভুত বলা হয়েছে তা নিজের ভাষায় লেখো।

৫। যে-কোনো চারটি বিষয়ে টীকা লেখো:

৪×৫ = ২০

- ক) 'লক্ষ্মণের শক্তিশেল' নাটকে রাম চরিত্র
- খ) 'যকের ধন'-এর পরিণতি
- গ) করালী চরিত্র
- ঘ) 'ভয়ংকর সুন্দর' উপন্যাসে কাশ্মীরের প্রকৃতি
- ঙ) গোয়েন্দা বরদাচরণ
- চ) 'মনোজদের অদ্ভুত বাড়ি' উপন্যাসে একটি ফোটোগ্রাফের গুরুত্ব

2024
HINDI
Paper : AECC-MIL-1

Time : 2 Hour

Full Marks : 40

The figure in the right-hand margin indicates marks.

Candidates are requested to give their answers in their own words as far as practicable.

(हिन्दी व्याकरण और रचना)

1. निम्नलिखित प्रश्नों में से किन्हीं चार के उत्तर दीजिए :
4X5=20

- (क) संज्ञा के भेदों को सोदाहरण लिखिए।
- (ख) विशेषण के प्रकारों पर विचार कीजिए।
- (ग) उपसर्ग के पाँच उदाहरण दीजिए।
- (घ) प्रत्यय और उपसर्ग में अंतर स्पष्ट कीजिए।
- (ङ) पल्लवन का आशय सोदाहरण स्पष्ट कीजिए।
- (च) निम्नलिखित शब्दों के तीन पर्यायवाची शब्द लिखिए—
अनल, धरती, जल, ईश्वर, सुमन

[Turn Over]

2. अपने विभागाध्यक्ष के पास एक आवेदन-पत्र लिखिए जिसमें कुछ दिनों के अवकाश के लिए अनुमति मांगी गयी हो।

अथवा

अपने पिता के पास एक पत्र लिखिए जिसमें अपनी जरूरत के अनुरूप कुछ पैसे माँगने हेतु आप निवेदन कर रहे हों।

1X10=10

3. निम्नलिखित में से किसी एक विषय पर निबंध लिखिए :

1X10=10

- (क) शान्तिनिकेतन
- (ख) महात्मा गाँधी
- (ग) सी. एफ. एंड्रयूज
- (घ) पर्यावरण का महत्व
- (ङ) नई शिक्षा नीति

BA (Honours) Examination, 2024

Semester-I (CBCS)

Course: CC-1

(Introductory Microeconomics)

Time: 3 hours

Full Marks: 60

Questions are of value as indicated in the margin

*Answer **two** questions from each group*

Group A

Answer **Question no 1** and **any one** from the rest of the following questions

1. a. (i) What is the difference between compensated demand curve and ordinary demand curve?

(ii) Which one of the above demand curves (compensated and ordinary demand curves) will be steeper for an inferior good? Explain.

b. You are having lunch at an all-you-can-eat buffet. If you are rational, what should be your marginal utility from the last piece of food you eat?

c. In a two good world is it possible both the goods are luxury from income definition? Explain.

(3+3)+5+4

2. a. Define price elasticity of demand and the income elasticity of demand. List and explain the three determinates of the price elasticity of demand.

b. Why do economists pay little attention to the algebraic sign of the elasticity of demand for a good with respect to its own price, yet pay careful attention to the algebraic sign of the elasticity of demand for a good with respect to another good's price?

c. Demonstrate rigorously that following conditions are equivalent.

(i) Indifference curves are strictly convex to the origin.

(ii) The marginal rate of substitution decreases along an indifference curve.

(1+1+3)+4+6

3. a. Define cross price elasticity of demand. What will be the sign cross price elasticity of demand in case of complementary goods?

b. With the rise in the price of a good, if revenue falls, what can you comment about the nature of the good?

c. Define Producer Surplus and Consumer Surplus.

d. Suppose demand for surgical mask rises. Explain what happens to producer surplus in market for surgical mask.

(2+1)+4+4+4

Group B

Answer *any two* questions

1. (i) Suppose a chair manufacturer is producing in the short run (with its existing plant and equipment). The manufacturer has observed the following levels of production corresponding to different numbers of workers:

Number of Workers	Number of chairs
1	10
2	18
3	24
4	28
5	30
6	28
7	25

- (a) Calculate the marginal and average product of labor for this production function.
(b) Does this production function exhibit diminishing returns to labor? Explain.
(c) Explain intuitively what might cause the marginal product of labor to become negative.

- (ii) Why are iso-cost lines straight lines? (4+4+4+3)

2. What do you mean by perfect competition? Describe its assumptions / characteristics.
Establish short run equilibrium of the firm under perfect competition.

(6+9)

3. State and explain the conditions for short run equilibrium of a monopolist. Can a monopolist earn supernormal profit in the long run? Why is there a social costs of monopoly power? (4+5+6)

4. Explain *any two* of the following: (7.5 X 2)

- (a) Normal Iso-quant, L-shaped Iso-quant and negatively sloped straight line Iso-quant.
(b) Increasing and Constant returns to scale.
(c) The 'shut down point' and 'break-even point' of a competitive firm
(d) Modern Theory of rent and Quasi Rent

(2)

Undergraduate Examination, 2024
Semester-I
CVAC: Tagore Studies (NEP)
(For Regular and Back Candidates)

Time: 3 Hours

Full Marks: 60

Questions are of value as indicated in the right-hand margin.

1. Answer the following question (*any fifteen*): 15 × 1 = 15
 - a. Write the name of Tagore's grandfather.
 - b. In which year was Debendranath born?
 - c. One of Tagore's elder brothers was a famous playwright. Who was he?
 - d. What is the name of Tagore's first published book of poems?
 - e. In which year did Tagore make his first-ever journey to England?
 - f. Write the name of Tagore's eldest son.
 - g. Tagore wrote a famous play based on the history of Tripura. What is its name?
 - h. "He is a man and no machine." Who is referred to as 'he'?
 - i. Write the name of any one member of the first group of teachers of Santiniketan *brahmacharyashram*.
 - j. "A daughter of the gods though I am, I do not have the powers of a god." Write the name of the text from which this sentence is taken.
 - k. In which year did Tagore dedicate "Visva-Bharati" to the people of India?
 - l. Write the date of the celebration of *Gandhi-punyaha* in Visva-Bharati.
 - m. To which event, as a mark of protest, did Tagore give up his 'knighthood'?
 - n. Write the name of the Bengali commemorative volume published on the occasion of Tagore's seventieth birthday.
 - o. Write the name of the center set up in Surul *Kuthibari*.
 - p. What is the title of Tagore's last public lecture?
 - q. Where did Tagore breathe his last?
 - r. Write the name of Tagore's last novel.
2. Write short-notes (*any three*): 3 × 5 = 15
 - a. Hindu *Mela* and the Tagore family
 - b. Tagore's first trip to the Himalayas.
 - c. Santiniketan *brahmacharyashram*
 - d. Sriniketan
 - e. Tagore's experience of watching the sunrise from the Sudder Street house during the composition of the poem "Morning Song".
 - f. Tagore's foreign travels.
3. Answer *any two* of the following questions: 2 × 15 = 30
 - a. Write an essay on Tagore's feelings as delineated in the text, 'The Earth'.
 - b. Analyse what Tagore means by the 'sense of harmony' element in the Indian civilization.
 - c. Discuss, based on "Asrama Education," how Tagore envisions the role of the Guru of the Asrama.
 - d. Write about Tagore's views on Buddhadev.
 - e. Discuss Tagore's aims and objectives that were instrumental in the foundation of Visva-Bharati.

Undergraduate Examination, 2024
Semester-I
CVAC: Tagore Studies (NEP)
(For Regular and Back Candidates)

Time: 3 Hours

Full Marks: 60

দক্ষিণ প্রান্তস্থ সংখ্যা প্রশ্নের মান নির্দেশক

১। যে-কোনো পনেরোটি প্রশ্নের উত্তর দাও :

১৫×১=১৫

- ক) রবীন্দ্রনাথের পিতামহের নাম কী ছিল?
- খ) কত সালে দেবেন্দ্রনাথের জন্ম হয়েছিল?
- গ) রবীন্দ্রনাথের এক দাদা বিখ্যাত নাট্যকার ছিলেন। তাঁর নাম কী?
- ঘ) রবীন্দ্রনাথের প্রথম প্রকাশিত কাব্যগ্রন্থ কী?
- ঙ) রবীন্দ্রনাথ প্রথম বিলাত যাত্রা করেন কোন সালে?
- চ) রবীন্দ্রনাথের প্রথম পুত্রের নাম কী?
- ছ) রবীন্দ্রনাথ ত্রিপুরার ইতিহাস ভিত্তি করে একটি বিখ্যাত নাটক লেখেন। নাটকটির নাম কী?
- জ) 'তিনি যন্ত্র নন, তিনি মানুষ' - এই 'তিনি' কে?
- ঝ) শান্তিনিকেতন ব্রহ্মচর্যাশ্রমের প্রথম শিক্ষকদের মধ্যে যে-কোনো একজনের নাম লেখো।
- ঞ) 'আমি দেবতার মেয়ে, কিন্তু দেবতার ক্ষমতা আমার নেই' - এই বাক্যটি কোন রচনার অন্তর্গত?
- ট) 'বিশ্বভারতী'কে কোন সালে রবীন্দ্রনাথ দেশের হাতে তুলে দেন?
- ঠ) গান্ধী পুণ্যাহ কোন তারিখে পালন করা হয়?
- ড) কোন ঘটনার প্রতিবাদে রবীন্দ্রনাথ 'স্যার' উপাধি ত্যাগ করেন?
- ঢ) রবীন্দ্রনাথের সত্তর বছরের জন্মদিন উপলক্ষ্যে প্রকাশিত বাংলা সংবর্ধনা গ্রন্থটির নাম কী?
- ণ) সুরুল কুঠিবাড়িতে কোন কেন্দ্র স্থাপন করা হয়?
- ত) রবীন্দ্রনাথের শেষ ভাষণের শিরোনাম কী?
- থ) রবীন্দ্রনাথ কোথায় প্রয়াত হন?
- দ) রবীন্দ্রনাথের শেষ উপন্যাসের নাম কী?

২। যে-কোনো তিনটি বিষয়ে টীকা লেখো :

৩×৫=১৫

- ক) হিন্দুমেলা ও ঠাকুরবাড়ি খ) রবীন্দ্রনাথের প্রথম হিমালয় ভ্রমণ গ) শান্তিনিকেতন ব্রহ্মচর্যাশ্রম
- ঘ) শ্রীনিকেতন ঙ) 'প্রভাসসংগীত' রচনার সময় সদর স্ট্রীটে সূর্যোদয় দেখার অভিজ্ঞতা চ) রবীন্দ্রনাথের বিদেশভ্রমণ

২×১৫=৩০

৩। যে-কোনো দুটি প্রশ্নের উত্তর দাও :

- ক) 'পৃথিবী' রচনাটি অবলম্বন করে রবীন্দ্রনাথের উপলব্ধির বিবরণ দাও।
- খ) ভারতবর্ষের সভ্যতা 'মিলনমূলক' বলে রবীন্দ্রনাথ কী বোঝাতে চেয়েছেন ব্যাখ্যা করো।
- গ) রবীন্দ্রনাথ আশ্রমের গুরুকে কীভাবে দেখতে চেয়েছেন, 'আশ্রমের শিক্ষা' রচনাটি অবলম্বন করে আলোচনা করো।
- ঘ) বুদ্ধদেব সম্পর্কে রবীন্দ্রনাথের মনোভাবের পরিচয় দাও।
- ঙ) বিশ্বভারতী প্রতিষ্ঠার ক্ষেত্রে রবীন্দ্রনাথের কোন কোন উদ্দেশ্য কাজ করেছে আলোচনা করো।

P.T.O.

(3)
Undergraduate Examination, 2024
Semester-I
CVAC: Tagore Studies (NEP)
(For Regular and Back Candidates)

Time: 3 Hours

Full Marks: 60

दाहिनी ओर के अंक प्रश्नों के मान-निर्देशक हैं

1. किन्हीं पंद्रह प्रश्नों के उत्तर दीजिए:

15×1=15

- क. रवीन्द्रनाथ के पितामह का नाम क्या था?
- ख. देवेंद्रनाथ का जन्म किस वर्ष हुआ?
- ग. रवीन्द्रनाथ के बड़े भाई नाट्यकार थे। उनका नाम क्या था?
- घ. रवीन्द्रनाथ का प्रथम प्रकाशित काव्यग्रंथ कौन सा है?
- ङ. रवीन्द्रनाथ ने पहली बार विलायत की यात्रा किस वर्ष की?
- च. रवीन्द्रनाथ के प्रथम पुत्र का नाम क्या था?
- छ. रवीन्द्रनाथ ने त्रिपुरा के इतिहास के आधार पर एक विख्यात नाटक की रचना की। नाटक का नाम क्या है?
- ज. 'वे यंत्र नहीं हैं, वे मनुष्य हैं' — यहां 'वे' कौन हैं?
- झ. शांतिनिकेतन ब्रह्मचर्याश्रम के प्रारंभिक शिक्षकों में से किसी एक का नाम लिखिए?
- ञ. 'मैं देवता की बेटी हूँ, किंतु मुझमें देवता की क्षमता नहीं है' — यह वाक्य किस रचना के अंतर्गत है?
- ट. 'विश्वभारती' को किस वर्ष रवीन्द्रनाथ ने देश के हाथों सौंप दिया?
- ठ. गांधी पुण्याह का पालन किस तिथि को किया जाता है?
- ड. किस घटना के प्रतिवाद में रवीन्द्रनाथ ने 'सर' की उपाधि का परित्याग किया?
- ढ. रवीन्द्रनाथ के 70वें जन्मदिन के उपलक्ष्य पर प्रकाशित बांग्ला अभिनंदन ग्रंथ का नाम क्या है?
- ण. सुरुल कुठिबाड़ी में कौन सा केंद्र स्थापित किया गया?
- त. रवीन्द्रनाथ के अंतिम भाषण का शीर्षक क्या है?
- थ. रवीन्द्रनाथ की मृत्यु कहां हुई?
- द. रवीन्द्रनाथ के अंतिम उपन्यास का नाम क्या है?

2. किन्हीं तीन पर टीका लिखिए:

3×5=15

- क. हिन्दू मेला और ठाकुरबाड़ी
- ख. रवीन्द्रनाथ का प्रथम हिमालय भ्रमण
- ग. शांतिनिकेतन का ब्रह्मचर्याश्रम
- घ. श्रीनिकेतन
- ङ. 'प्रभात संगीत' की रचना के समय सदर स्ट्रीट में सूर्योदय देखने का अनुभव
- च. रवीन्द्रनाथ का विदेश भ्रमण

3. किन्हीं दो प्रश्नों का उत्तर दीजिए:

2×15=30

- क. 'पृथ्वी' रचना के आधार पर रवीन्द्रनाथ की उपलब्धियों का वर्णन कीजिए।
- ख. भारतवर्ष की सभ्यता को 'मिलन मूलक' बताकर रवीन्द्रनाथ ने क्या समझना चाहा है, व्याख्या कीजिए।
- ग. रवीन्द्रनाथ आश्रम के गुरुओं को किस प्रकार का देखना चाहते हैं, 'आश्रम की शिक्षा' के आधार पर आलोचना कीजिए।
- घ. बुद्धदेव के संबंध में रवीन्द्रनाथ के मनोभावों का परिचय दीजिए।
- ङ. विश्वभारती की स्थापना के संबंध में रवीन्द्रनाथ का उद्देश्य क्या था, आलोचना कीजिए।

Four Year Undergraduate Programme with Economics MAJOR Examination, 2024
Semester-I (NEP)
Course: MJEC01
(Introductory Microeconomics)

Time: 3 hours

Full Marks: 80

Questions are of value as indicated in the margin

Answer two questions from each group

Group A

Answer **Question no 1** and **any one** from the rest of the following questions

1. a. (i) What is the difference between compensated demand curve and ordinary demand curve?
(ii) Which one of the above demand curves (compensated and ordinary demand curves) will be steeper for an inferior good? Explain.
b. You are having lunch at an all-you-can-eat buffet. If you are rational, what should be your marginal utility from the last piece of food you eat?
c. In a two good world is it possible both the goods are luxury from income definition? Explain.
(4+4)+6+6
2. a. Define price elasticity of demand and the income elasticity of demand. List and explain the three determinates of the price elasticity of demand.
b. Why do economists pay little attention to the algebraic sign of the elasticity of demand for a good with respect to its own price, yet pay careful attention to the algebraic sign of the elasticity of demand for a good with respect to another good's price?
c. Demonstrate rigorously that following conditions are equivalent.
(i) Indifference curves are strictly convex to the origin.
(ii) The marginal rate of substitution decreases along an indifference curve.
(2+2+4)+5+7
3. a. Define cross price elasticity of demand. What will be the sign cross price elasticity of demand in case of complementary goods?
b. With the rise in the price of a good, if revenue falls, what can you comment about the nature of the good?
c. Define Producer Surplus and Consumer Surplus.
d. Suppose demand for surgical mask rises. Explain what happens to producer surplus in market for surgical mask
(3+2)+5+5+5

Group B

Answer *any two* questions

1. (i) Suppose a chair manufacturer is producing in the short run (with its existing plant and equipment). The manufacturer has observed the following levels of production corresponding to different numbers of workers:

Number of Workers	Number of chairs
1	10
2	18
3	24
4	28
5	30
6	28
7	25

- (a) Calculate the marginal and average product of labor for this production function.
(b) Does this production function exhibit diminishing returns to labor? Explain.
(c) Explain intuitively what might cause the marginal product of labor to become negative.
- (ii) Why are iso-cost lines straight lines? (5+5+5+5)
4. What do you mean by perfect competition? Describe its assumptions / characteristics. Establish short run equilibrium of the firm under perfect competition. (8+12)
5. State and explain the conditions for short run equilibrium of a monopolist. Can a monopolist earn supernormal profit in the long run? Why is there a social costs of monopoly power? (6+6+8)
6. Explain *any two* of the following: (10+10)
- (a) Normal Iso-quant, L-shaped Iso-quant and negatively sloped straight line Iso-quant.
(b) Increasing and Constant returns to scale.
(c) The 'shut down point' and 'break-even point' of a competitive firm
(d) Modern Theory of rent and Quasi Rent

Four Year Undergraduate Programme with Economics Major Examination, 2024
Semester - I (NEP)
Subject: Economics
Course: MJEC02
(Mathematical Methods for Economics I)

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin

Answer any four (04) of the following questions

1. (a) Prove that the function $f(x) = |x|$ is not differentiable at $x = 0$.
(b) Based on the Cauchy's theorem on limit, show that: $\lim_{n \rightarrow \infty} \left(\frac{1}{n} + \frac{2^{\frac{1}{n}}}{n} + \dots + \frac{1}{n} \right) = 1$. [10+10]
2. Calculate $\frac{dy}{dx}$ by applying the first principle of differentiation when,
(a) $y = \sin x$ (b) $y = e^{2x}$ (c) $y = 3x + 2$ [7+7+6]
3. (a) Following set theory, explain the following terms with examples:
(i) Universal set (ii) Proper subset (iii) Cardinal number of a set (iv) Null set
(b) Let A, B and C be three sets such that $A \cap B \neq \emptyset$; $A \cap C \neq \emptyset$ and $B \cap C = \emptyset$. Draw a Venn diagram of the sets. Shade the area representing $A \cup B \cup C$ the given sets. Also find the cardinal number of the set $A \cap B \cap C$
(c) In the context of *union* and *intersection* in set operation, what do you mean by the following rules?
(i) Associative rule (ii) Distributive rule (iii) De Morgan's rule [6+8+6]
4. (a) It is known that among a group of students, 50 played cricket, 50 played hockey and 40 played volley ball. 15 played both cricket and hockey, 20 played both hockey and volley ball, 15 played cricket and volley ball and 10 played all of the three games.
(i) If every student played at least one game, find the total number of students.
(ii) How many of the students played only cricket?
(b) A function is considered as a relation or mapping between two sets. In this context explain with examples the terms (i) Domain and Range (ii) Into and Onto mapping
(c) What is a binary relation? When it is called symmetric? When it is called transitive? Give an example of a binary relation in $A \times A$ (A = set of integers) which is transitive but not symmetric. [8+6+6]
5. (a) State and prove the Mean Value Theorem.
(b) Verify the Rolle's theorem and find the values of 'c' in the given intervals where $f'(c) = 0$:
(i) $f(x) = x^3 - 4x$ over $[-2, 2]$ (ii) $f(x) = x^2 + 2x$ over $[-2, 0]$ [10+5+5]
6. (a) State the n^{th} degree Taylor polynomials of a function $y = f(x)$ at $x = k$, and then express the linear and quadratic approximations.
(b) An open-top box has to be made from a 36×48 sq meter piece of cardboard by removing a square from each corner of the box and folding up the flaps on each side. Find the size the square to be cut out of each corner to make a box with the maximum volume. [8+12]

[Turn Over]

7. (a) What is the distinction between a natural number, a rational number and a real number? Explain with examples.
- (b) Solve the following system of linear equations by Gaussian elimination method:
- $$\begin{aligned}2x - y + 3z &= 9 \\x + y + z &= 6 \\x - y + z &= 2\end{aligned}$$
- (c). Find any linear combination of the vectors $\{0, 3, 4\}$, $\{2, 0, 1\}$ and $\{0, -1, 2\}$. What is the magnitude of the vector you created? [5+10+5]
8. (a) When two vectors are said to be orthogonal? Three vectors are $v_1 = \{-5, 3, 7\}$, $v_2 = \{1, 2, 2\}$, and $v_3 = \{6, -8, 5\}$. Find which two of them are perpendicular to each other.
- (b) Define a vector space. Suggest a set of vectors that might form a basis in a 3-dimensional vector space. Show how you can express a vector like $\{a, b, c\}$ with the help of that basis (a, b, c are scalars)
- (c) Distinguish between dot and cross product of two vectors. [6+8+6]

Four Year Undergraduate Programme with Economics MINOR Examination, 2024

SEMESTER-I (NEP)

(For regular & back candidates)

Subject: Economics (Minor)

Course: MNEC01 (Introductory Microeconomics)

Time: 3 Hours

Full Marks: 80

Attempt any Four from the following

1. (a) What are the properties of the indifference curve?
(b) With the help of the indifference curve (IC) and the budget line (BL), explain how the optimum choice between two goods (X and Y) is made.
(c) How is Giffen good defined in terms of substitution effect and income effect? Explain.
(4+6+10=20)
2. (a) Distinguish between VMP_L and MRP_L ? Are they same in competitive markets?
(b) How is monopolistic exploitation different from monopsonistic exploitation? Explain
(c) Can trade unions address the problem of monopolistic exploitation and monopsonistic exploitation? Justify your answer.
(8+8+4=20)
3. (a) What are the assumptions of a perfectly competitive market?
(b) Explain the short-run and long-run equilibrium of a firm in a perfectly competitive market.
(6+14=20)
4. (a) What are the ten fundamental principles of economics?
(b) Explain any four of the fundamental principles of economics.
(10+10=20)
5. (a) Explain the three stages of production of a firm. Why does a rational entrepreneur operate in the Second stage of production process?
(b) How is average cost (AC), average variable cost (AVC), average fixed cost (AFC) and Marginal cost (MC) of a firm is calculated? Explain with the help of a diagram.
(10+10=20)
6. (a) What is meant by price discrimination in economics?
(b) What are its types? Briefly explain them with the help of diagrams.
(c) How is monopolistic market different from monopoly market?
(4+12+4=20)
7. (a) Define and explain the law of demand and law of supply with the help of diagram.
(b) Explain consumer surplus (CS) and producer surplus (PS) with a diagram.
(c) In this context explain the welfare implications of imposing GST on a good.
(5+7+8=20)
8. (a) With the help of income and substitution effect, explain the choice between work effort and leisure.
(b) In this context, explain the backward bending labour supply curve.
(10+10=20)

Four Year Undergraduate Programme- Economics (Major)-2024

Semester-I

MNPS01 (NEP) (For regular candidates)

Subject: Political Science

(Political Theory-I)

Time: 3 Hours

Full Marks: 80

Questions are of value as indicated in the margin

Answer any four questions

(20x4=80)

- 1) What is justice? Give a brief account of the historical and the modern theories of justice.
(4+16)
- 2) How has liberalism evolved as a political ideology, and what are its key principles in contemporary political discourse?
(10+10)
- 3) Define normative approach in political theory. How do empirical and historical approaches in political theory help in analyzing political institutions and processes across different contexts?
(5+15)
- 4) What are the major theories of rights, and how do they shape the understanding of the origin and scope of rights?
(20)
- 5) State the core concepts of the Marxist theory of state. How did Marxist theory evolve after Marx, and what key contributions did thinkers like Lenin, Gramsci, and Althusser make to its development?
(10+10)
- 6) Mention the key features of socialism. How does socialism interpret the role of the state, economy and social ownership?
(8+12)

**Four-Year Undergraduate Programme with Economics Major Examination,
2024**

Semester- I

Economics

Course: SEEC 01 (NEP)

(Statistical Method-I)

Time: 3 Hours

Full Marks: 60

Questions are of value as indicated in margin

Answer any four questions

1. (a) Distinguish between attribute and variable.

(b) Define class mark, width and frequency density.

(c) If $y_i = \frac{x_i - c}{d}$, $i = 1, 2, \dots, n$, where c and d are constants, prove that $\bar{x} = c + d\bar{y}$ 4+6+5=15

2. (a) Prove that $\frac{1}{n} \sum (x^2 - A)$ is least when $A = \bar{x}$, where x_1, x_2, \dots, x_n are observations, A is any arbitrary constant and \bar{x} arithmetic mean.

(b) Find the median of the data given below: 8+7=15

Class Boundaries	15-25	25-35	35-45	45-55	55-65	65-75
frequency	4	11	19	14	0	2

3. Explain the advantage, disadvantage of AM, GM and H.M. 15

4. (a) For any observation prove that,
 $AM \geq GM \geq HM$

(b) Find the standard deviation (SD) from the following data: 10+5=15
49, 63, 46, 59, 65, 52, 60, 54

5. (a) Define 'coefficient of variation'. What are special use of this measures?

(b) What are 'quartiles'? How do you calculate quartiles from group frequency distribution? 9+6=15

6. (a) What is meant by 'moment of a distribution? What are the 'raw and central' moments?

(b) Describe different measures of 'skewness' 8+7=15

7. (a) What is scatter diagram? Explain how this can be used to indicate the degree and type of association between two variables.

(b) Prove that correction coefficient lies between -1 and +1 6+9=15

8. (a) Prove that correlation coefficient does not depend on the origin or scale of observations. 7+8=15

(b) State the properties of linear regression.