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L-3/T-I/IPE

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BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-I B. Sc. Engineering Examinations 2023-2024

Sub: **HUM 277** (Fundamentals of Economics)

Full Marks: 210

Time: 3 Hours

The figures in the margin indicate full marks.

Symbols indicate their usual meaning.

USE SEPARATE SCRIPTS FOR EACH SECTION

**SECTION – A**

There are **FOUR** questions in this section. Answer any **THREE** questions including

**Question No. 1 is compulsory.**

1. (a) What is monopolistic competition? Illustrate the short-run and long-run equilibrium of a firm under monopolistic competition. Provide a comparative analysis of monopolistic competition and the oligopoly market structure. (20)
- (b) What do you understand by revenue of a firm? From a hypothetical revenue schedule, draw the average and marginal revenue curves of a firm facing a downward sloping demand curve. The average revenue (AR) and total cost (TC) functions of a firm are given by (15)
- $$AR = 4000 - 33M$$
- $$TC = 2M^3 - 3M^2 + 400M + 5000$$
- where M refers to quantity of output.
- Estimate (i) the level of output that yields maximum profit, (ii) the maximum profit and (iii) percentage rate of profit.
2. (a) Illustrate the concept of diminishing marginal utility. Derive the conditions for consumer equilibrium under both the Cardinalist approach and the Ordinalist (Indifference curve) approach. Compare and contrast the two approaches. (20)
- (b) Clarify the concepts of short run and long run production. Sketch the short run cost curves from a hypothetical short run cost schedules. Show how the long average run cost (LARC) curve is drawn. (15)
3. (a) Differentiate between Gross Domestic Product (GDP) and Gross National Product (GNP). Why is it important to measure the national income of a country? Discuss its significance for economic planning and policy-making. (20)
- (b) Define Consumer Price Index (CPI). From the following table: (15)

Goods	Price <sub>2020</sub>	Price <sub>2021</sub>	Price <sub>2022</sub>	Quantity <sub>2020</sub>	Quantity <sub>2021</sub>	Quantity <sub>2022</sub>
Foods	120	150	180	100	120	150
Cloths	100	150	200	80	110	150

Contd ..... P/2

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**Contd ... Q. No. 3(b)**

Calculate,

- (i) Real GDP for 2021 and 2022;
- (ii) Economical growth rate for 2022;
- (iii) Consumer Price Index (CPI) for 2021 and 2022; and
- (iv) Inflation rate for 2022 by using CPI.

Note: Consider year 2020 as the base year.

4. Write short notes on any THREE of the following (35)
- (i) Supernormal profit, normal profit and shutdown point
  - (ii) Indifference curve and marginal rate <sup>of</sup> substitution (MRS)
  - (iii) Various types of elasticity of demand and their measurements
  - (iv) Free enterprise economy and Mixed economy

**SECTION – B**

There are **FOUR** questions in this section. Answer any **THREE** questions including **Question No. 5 is compulsory.**

5. (a) What is fiscal policy? Why does the government engage in public spending? (8)
- (b) What is money? Distinguish between M1 and M2 money. (5)
- (c) Briefly explain how money is created by the fractional reserve banking system. (10)
- (d) What is monetary policy? Evaluate the following instruments of monetary policy: (12)
- (i) Open Market Operations
  - (ii) Discount rate mechanism, and
  - (iii) Reserve requirement
6. (a) What is market? How equilibrium <sup>is</sup> established in the market? Explain. (7)
- (b) What are 'excess demand' and 'excess supply', and how do they affect market equilibrium? Explain. (7)
- (c) Assume that the Canon EOS M50 Mark II and the Sony ZV-E10 are substitute mirrorless cameras. What will happen to the market for the Sony ZV-E10 if Canon significantly increases the price of the EOS M50 Mark II, while the price of the ZV-E10 remains unchanged? Explain your answer using partial equilibrium analysis and suitable diagram. (10)
- (d) Explain Ricardo's Theory of Comparative Advantage. How does this theory demonstrate the gains from trade between nations, even when one country is more productive in all goods? Illustrate with a suitable example. (11)

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- 7. (a) What is Aggregate Demand? Why does AD curve slope downward? Briefly explain. (9)
- (b) What is short-run aggregate supply curve? Why does short-run aggregate supply curve slope upward? Explain. (9)
- (c) Evaluate Frictional, Structural and Cycle unemployment. (9)
- (d) Consider the following table: (8)

Indicators	Amount
Adult Population	600 Million
Number of employed	300 Million
Not in the Labor force	150 Million

- (i) Calculate the Labor force and the Labor force participation rate.
  - (ii) Calculate the Unemployment rate.
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- 8. (a) What is Economic Development? Distinguish between Economic growth and Economic Development. (8)
  - (b) Briefly explain the concept of Human Development Index (HDI), Green GDP and Gross National Happiness (GNH). (9)
  - (c) Define project appraisal. Explain different types of appraisal used to evaluate a project's feasibility and impact. (9)
  - (d) The Ministry of Science and Technology plans to implement a project requiring an initial investment of 36,000,000.00 BDT. The project is expected to yield benefits of 15,000,000.00 BDT in the first year, 14,000,000.00 BDT in the second year, and 12,000,000.00 BDT in the third year. If the social discount rate is 5%, evaluate whether the project should be approved using Cost-Benefit Analysis (CBA). Provide calculations to justify your decision. (9)

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