Name _____

Jaypee Institute of Information Technology, Noida

Enrollment No._____

End Term Examination, 2019

B.Tech 3rd Semester

Course Title: Economics/Managerial Economics

Course Code: 15B11MS211/10B11PD311

Maximum Time: 2 Hrs

Maximum Marks: 35

At the end of the course the students will be able to:

CO1: Explain the basic micro and macro economics concepts.

CO2: Analyze the theories of demand, supply, elasticity and consumer choice in the market.

CO3: Analyze the theories of production, cost, profit and breakeven analysis.

CO4: Evaluate the different market structures and their implications for the behaviour of the firm.

CO5: Examine the various business forecasting methods.

CO6: Apply the basics of national income accounting and business cycles to Indian economy.

Attempt all the questions.

1. A monopolist with $TC = 3q^2 + q + 12$ faces a demand curve of $P = 81 - 2q$ [4,CO4]
   (a) Find the monopoly price and quantity.
   (b) Find consumer surplus and dead weight loss under monopoly.

2. Firm A is a member of monopolistically competitive market. Its total cost function is [5,CO4] $TC = 900 + 60Q + 9Q^2$. The demand curve for the firms differentiated product is given by $P = 660 - 16Q$.
   a. Determine the firms profit maximising output, price and profit.
   b. Attracted by potential profits, new firms enter the market. In long run equilibrium, it is claimed that each firm produces 6 units at a price of Rs. 264. Is this claim correct? Give your answer by showing relevant calculations.

3. An oligopolist's demand curve is $P = 30 - Q$ for Q smaller than 10 units and $P = 36 - 1.6Q$ for Q [4,CO4] greater than or equal to 10 units. Its marginal cost is 7.
   a. Graph this kinked demand curve and the associated MR curve.
   b. What is the firm's optimal output? What if MC falls to 3?

4. Based on quarterly data from 2016: 1 to 2019: IV a company estimates that its product's sales [4,CO5] can be projected using the trend equation
$$S_t = 14.57 + 0.93t$$
   Where 2016: 1 is period 1. Actual fourth quarter sales were as follows

Year	Sales (in million Rs)
2016	23
2017	18
2018	22
2019	33

   Estimate the seasonally adjusted sales for 2020: IV.

5. A firm has the following production function: [3,CO3]
$$Q = 4L^2 + 6K^2 - 2LK$$
   Budget constraint of the firm is Rs 720, the market going wage rate, $w = $ Rs 15 and cost of capital, $r = $ Rs 15. Calculate the optimum output.

6. A local council raises the price of car parking from \$ 3 per day to \$ 5 per day and finds that [3,CO2] usage of car park contracts from 1200 cars per days to 900 cars per day. Calculate the price elasticity of demand for this price change and calculate whether the total revenue from the car park rises or falls?

7. From the following data calculate, NDP$_{FC}$ and Net factor income from abroad (NFIA). [4,C

S. No.	Items	Rs(in crores)
1.	NNP$_{MP}$	50,000
2.	Indirect taxes	1000
3.	Subsidies	1200
4.	Operating Surplus	5000
5.	Mixed Income of Self Employed	2000
6.	Compensation of Employees	15000

8. Rosie currently works for an export firm in the apparel industry. She is considering opening her [3,C own export firm, where she expects to earn Rs 20 lacs per year once it is established. In order to run her own export firm where she would need an office and a support staff. She has found a rented space for office purpose at a rent of Rs 5 lacs per year. The support staff would be hired for Rs 6 lacs per year. In order to start her own apparel firm, Rosie would have to quit her current job where she is earning an annual salary of Rs 10 lacs. Calculate explicit cost, implicit cost, accounting profit and economic profit. Also suggest whether she should start her own firm or not?

9. Define Inflation? Explain types of inflation according to its pace. [3

10. Business cycles create problems for the economy. Identify and explain the four variables that cause changes in the business cycles. [2,