Question Booklet Number:

Applicant's Name: _____

Roll Number: ☐☐☐☐☐☐   **Application Number:** A P U 2 1 E C O ☐☐☐

Date: ☐☐☐ 2 0 2 1   **Test Centre:** _____

	Section Title	Question Type	No. of Questions	Question Nos.	Total Time *
Part I	1. Microeconomics	Multiple choice	10	1 to 10	**2 hours**
	2. Macroeconomics	Multiple choice	10	11 to 20	
	3. Quantitative methods	Multiple choice	10	21 to 30	
	4. Indian Economy and Political Economy	Multiple choice	10	31 to 40	
Part II	Essay Question	Answer BOTH the Essay Questions			**1 hour**

* Candidates shall be allowed to leave the examination hall only after 1 hour of the commencement of the Examination.

Please read the following instructions carefully:

1) The instructions given by the Examination Administrators and Invigilators must be followed. Violation of instructions will result in disqualification and the candidate will be asked to leave the Examination Hall. Any candidate found guilty of using unfair means of any nature inside the Examination Hall shall be liable to be disqualified.

2) Candidates are **NOT** allowed to carry any papers, notes, books, log tables, scientific calculators, scanning devices, communication devices like mobile phones to the Examination Hall. ONLY NON-SCIENTIFIC CALCULATORS ARE ALLOWED.

3) Before answering the questions, write your roll number in the space provided in the Question Booklet. On the OMR Answer Sheet, please fill in the necessary details and sign at the appropriate place.

4) Each multiple choice question carries one mark. There is NEGATIVE MARKING: you get +1 for a correct answer and -0.5 for a wrong answer.

5) Each multiple choice question is followed by four options. Please mark the correct/most appropriate option by darkening the relevant OVAL with a BLUE/BLACK ball point pen on the OMR Answer Sheet. Darken ONLY ONE OVAL for each answer so that the letter inside the OVAL is not visible. **USE OF PENCILS IS PROHIBITED.** The CORRECT and INCORRECT methods of darkening an OVAL are shown here.

Correct Method
(A) ■ (C) (D)

Wrong Method
(A) (B) (C) ✔
(A) ⊠ (C) (D)
■ ■ (C) (D)
(A) (B) (C) ⬤

6) Please DO NOT make any stray marks anywhere on the OMR Answer Sheet. DO NOT fold or wrinkle the OMR Answer Sheet. Rough work MUST NOT be done on the OMR Answer Sheet. Use your question booklet for this purpose.

7) The Question Booklet and OMR sheet will be collected by the Invigilator after 2 hours from the commencement of the examination.

8) Essay Questions booklet will be distributed after 1 hour from the commencement of the examination.

9) In Part II, M.A. Economics programme aspirants have to write BOTH the Essay questions

10) After writing the Essay, please hand over the booklet to the Room Invigilator. DO NOT carry the question booklet or any part thereof outside the Examination Hall.

Section 1 - Microeconomics

No. of Questions: 10

1) Let the utility function of an individual indicating their preferences over the quantity of two goods denoted by x and y, be given by $u(x,y)=x-y$. Then the marginal rate of substitution between these two goods, and the slope of the indifference curves denoting this utility function would respectively be

A) 1 and 1

B) 1 and -1

C) -1 and 1

D) -1 and -1

2) Let $y(k,l)$ be a production function such that $y(4k,4l)=2y(k,l)$, then the production function exhibits:

A) Constant returns to scale

B) Increasing returns to scale

C) Decreasing returns to scale

D) Linearity

3) When a market is perfectly competitive then the *marginal revenue* for a firm

A) Increases as it produces more

B) Decreases as it produces more

C) Depends on the cost function

D) Is equal to the price

4) Let A and B be two individuals, and x_A and x_B be the amounts of a good consumed by them respectively. If one wants to model a situation where individual A is self-centred and individual B is altruistic, which pair of utility functions best represents this case?

A) $u_A(x_A, x_B)= x_A + x_B$ and $u_B(x_A, x_B)= x_A + x_B$

B) $u_A(x_A, x_B)= x_A$ and $u_B(x_A, x_B)= x_A + x_B$

C) $u_A(x_A, x_B)= x_A + x_B$ and $u_B(x_A, x_B)= x_B$

D) $u_A(x_A, x_B)= x_A$ and $u_B(x_A, x_B)= x_B$

5) Two people, A and B, are expected utility maximisers. A's utility function is given by $u_A(x)=x^2$. B's utility function is given by $u_B(x)=\sqrt{x}$. Both are offered a lottery ticket worth Rs 100, and the prize money of Rs 10,000. The probability of winning the lottery is 0.9%. Which one of them is going to buy the ticket?

A) A will buy the ticket

B) B will buy the ticket

C) Both A and B will buy the ticket

D) Neither A nor B will buy the ticket

6) Consider the following two statements about a simple two-person, two good exchange economy where there are no externalities, information is perfect, neither individuals have any market power, and utility functions are 'well-behaved'.

A: All Pareto efficient outcomes are achievable through competitive equilibria
B: All competitive equilibria are Pareto efficient

A) Both A and B are true

B) A is true but B is not

C) B is true but A is not

D) Neither A nor B is true

7) Consider four different possible market structures for a homogenous good with constant marginal cost. Assume that the demand function is identical in all four cases.

1: Cournot or quantity competition with two firms. Price: p_1
2: Cournot or quantity competition with infinitely many firms. Price: p_2
3: Bertrand or price competition with two firms. Price: p_3
4: Bertrand or price competition with infinitely many firms. Price: p_4
Which of the following statements about the prices is true?

A) $p_1 = p_2 = p_3 = p_4$

B) $p_1 > p_2 = p_3 = p_4$

C) $p_1 > p_2 = p_3 > p_4$

D) $p_1 > p_2$ and $p_3 > p_4$

8) A person's utility function over the amount of rice in kg (r) and amount of dal in kg (d) is given by $u(r,d)=r^{0.4}d^{0.6}$. The person already has 5 kgs of rice at home that can be consumed but not sold. Now the person heads off to the market to purchase rice and dal with a budget of Rs 100. Now his utility function can be written as $u(r_p,d)=(r_p+5)^{0.4}d^{0.6}$, where r_p is the amount of rice purchased, and the amount of rice consumed $r=r_p+5$. If the price of rice is 1 rupee per kg and the price of dal is 2 rupees per kg, what is the amount of rice that the person will purchase?

A) 37

B) 40

C) 60

D) 63

9) Consider the following 2-person simultaneous moves game

	D	H
d	2, 5	5,4
h	3, 4	4,3

The table above shows the payoff matrix between player 1 who chooses between strategies d and h, and player 2 who chooses between strategies D and H. The first number in each cell denotes the payoff for player 1 and the second number denotes the payoff for player 2. The Nash equilibrium will be:

A) d, D

B) d, H

C) h, D

D) h, H

10) A firm has three components of its production cost. It has a fixed cost c_f of 10 units that is independent of the production level. It has raw material cost c_r that varies linearly with the quantity produced. It has labour cost c_l that varies as the square of the quantity produced. Hence total cost $c= c_f + c_r + c_l$. The marginal cost of this firm will be

A) Constant with quantity produced

B) Increasing at a constant rate with quantity produced

C) Increasing at an increasing rate with quantity produced

D) Increasing at a decreasing rate with quantity produced

Section 2 - Macroeconomics

No. of Questions: 10

11) Consider an open economy where the savings propensity is 0.3 and import propensity is 0.2. The value of the multiplier is

A) 1.5

B) 2

C) 3

D) 4

12) If the growth rate of nominal GDP in a given period is 9% and the growth rate of real GDP is 5%, which of the following statements is correct?

A) Inflation rate is 4%

B) Inflation rate is 14%

C) Inflation rate is 1.8%

D) Inflation rate cannot be calculated from the given information

13) Consider a closed economy without government intervention. By the income method, gross domestic product is found to be equal to the sum of wages and profits. Assume that all wages are spent on consumption expenditure and all profits are saved. If investment is Rs 50 billion, which of the following statements is correct?

A) Profit is less than Rs 50 billion

B) Profit is equal to Rs 50 billion

C) Profit is greater than Rs. 50 billion

D) Profit cannot be determined from given information

14) Assume that the only tax which the government levies in an economy is the lump-sum tax. The economy is demand constrained. The government increases expenditure by maintaining a *balanced budget*. Which of the following remarks would be *wrong*?

A) Change in government expenditures would be equal to change in taxes

B) The value of the multiplier would be greater than 1

C) Higher government expenditure would lead to higher output

D) The consumption expenditure would remain unchanged

15) C=10+0.5Y, I=20, G=30, X=5 and M=0.3Y. If C,I, G, X, M and Y denote consumption, investment, government expenditure, export, import and GDP respectively, what is the equilibrium level of GDP ?

A) 61.25

B) 81.25

C) 91.5

D) 101.5

16) The original Phillips Curve is argued to be negatively sloped in the inflation-unemployment space on the basis of the following assumption:

A) Higher employment leads to higher expected price

B) Higher employment leads to higher nominal wage rate

C) Higher inflation leads to higher output and employment

D) Higher employment leads to higher mark-up

17) Consider a closed economy with positive government expenditure and zero taxes. The output is constrained by aggregate expenditure. Aggregate savings is the product of savings propensity and output, where savings propensity is fixed and less than 1. The government expenditure and interest rate are exogenously given. Investment decisions are formed on the basis of expectations as argued by Keynes and it responds negatively to changes in interest rate. Which of the following statements is *wrong*?

A) If government expenditure rises by Re. 1, aggregate savings increases by Re.1

B) If savings propensity rises, aggregate savings rises

C) If interest rate rises, aggregate savings fall

D) If investment rises by Re.1, output rises by more than Re.1

18) Consider an open economy where output is constrained by balance of payment. The net capital inflow is zero, real exchange rate is fixed, and trade is balanced in every period. The level of import at any given period is equal to the product of import propensity of output and the level of output. The import propensity of output is *fixed* at 0.25 for any given period. If *growth rate* of export is 5%, then the growth rate of output for that period is

A) 1.25%

B) 5%
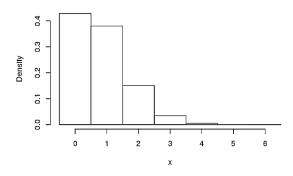
C) 20%

D) Cannot be determined from the given information

19) The growth rate of labour productivity of an economy is 3%, whereas the growth rate of labour supply is 1%. What would be the steady state growth rate of output in Solow model?

A) 2%

B) 3%

C) 4%

D) None of the Above

20) Suppose there are 2 countries, the Goldland and the Creditmoneyland. The output in both the countries are equal in the initial period. In both the economies, the IS schedule is negatively sloped. The money supply is fixed in Goldland and interest rate is determined by money demand at given money supply. In Creditmoneyland, the interest rate is fixed by central bank and money supply is determined by money demand. Now government expenditures increase by 1 unit in both the countries. The output rises to Y_G and Y_C and in Goldland and Creditmoneyland respectively. If everything else is similar between the 2 countries, which of the following is correct?

A) $Y_G > Y_C$

B) $Y_C > Y_G$

C) $Y_C = Y_G$

D) Cannot be determined from the given information
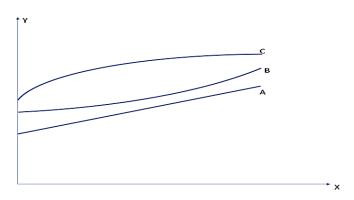
Section 3 - Quantitative methods

No. of Questions: 10

21) From the following histogram of a variable x, which of the options is true.

Histogram of x

A) Mean of x < Median of x

B) Mean of x = Median of x

C) Mean of x > Median of x

D) Impossible to say

22) If A and B are disjoint events with $P(A) = 0.2$ and $P(B) = 0.5$. Suppose $\bar{A}$ denotes the complement of the event A. Then what is $P(\bar{A} \cap B)$?

A) 0.50

B) 0.30

C) 0.10

D) 0

23) Suppose θ denotes the true unknown average weight of women in India. Suppose you collect two random samples, each of the same size, to estimate θ. Suppose $\widehat{\theta_1}$ and $\widehat{\theta_2}$ are two estimators of θ such that $E[\widehat{\theta_1}] = E[\widehat{\theta_2}] = \theta$. Further suppose that variance of $\widehat{\theta_1}$ < variance of $\widehat{\theta_2}$. Then which of the following is true?

A) $\widehat{\theta_1}$ is a better estimator of θ compared to $\widehat{\theta_2}$

B) $\widehat{\theta_2}$ is a better estimator of θ compared to $\widehat{\theta_1}$

C) Both are equally good estimators

D) Not enough information to say which is a better estimator

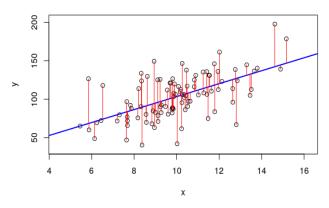24) Please refer to the figure below. If Y=ln(X), then which of the following options is true?

A) The relationship between the two variables is best depicted by graph A.

B) The relationship between the two variables is best depicted by graph B.

C) The relationship between the two variables is best depicted by graph C.

D) It depends on whether we take negative values of x or positive values of x.

25) Suppose a random variable Y is such that $P[Y=c] = 1$ for some real number c. Then the variance of Y is

A) c

B) 1

C) 0

D) Cannot be calculated

26) Fatima is a scientist and works for the Weather Board of India and is involved in making daily weather forecasts for National Television. She is known to be very good at her work. Mohan is a salesman who works for a private company. Both Fatima and Mohan do not like getting wet in the rain, but they also do not like carrying an umbrella unnecessarily. Suppose whether it rains today is independent of whether it rained yesterday, and we use R to denote the event that it rains today. Using standard notation in probability theory, please read the following statements:

●**Statement 1:** $E[R|$Fatima is carrying an umbrella today$] > E[R|$Mohan is carrying an umbrella today$]$.

●**Statement 2:** $E[R|$Fatima was carrying an umbrella yesterday$] = E[R|$Mohan was carrying an umbrella yesterday$]$.

●**Statement 3:** $E[R|$Fatima is carrying an umbrella today$] = E[R|$Fatima was carrying an umbrella yesterday$]$

●**Statement 4:** $E[R|$Fatima is carrying an umbrella today$] = E[R|$Mohan was carrying an umbrella yesterday$]$
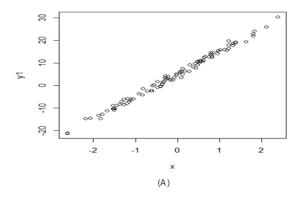
Which of the following is most likely to be true?

A) Only statement 1 is true

B) Statements 1 and 2 are true

C) Statements 1, 2 and 3 are true

D) All statements are true

27) In the figure below, x is an explanatory variable and y is a response variable. Based on observed data of x and y, a linear regression line has been estimated. The blue line is the estimated regression line of y on x. What are the red lines in the graph called?
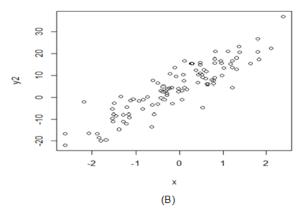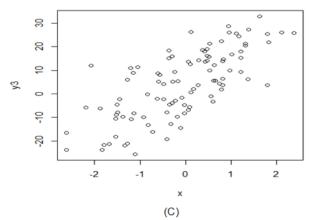

Regression Line

A) Predicted Values

B) Intercept

C) Residuals

D) Standard error

28) An individual claimed that the mileage (i.e., the petrol consumption per unit distance travelled) of her car does not depend on the speed with which the car was driven. To test this claim, she drove the car at various speeds between 45 km/hour and 75 km/hour and collated the data on how many litres of petrol were being consumed at each speed level. Based on this data, she fitted a simple linear regression model and obtained the following estimated regression equation: $\hat{Y} = 0.05 - 0.17x$ where Y denotes the mileage (kilometres per litre) and x denotes the speed level at which she drove. Based on this, she tested the hypothesis whether mileage per litre of petrol is unaffected by the speed with which she drove and got a p-value of 0.001. Which of the following statements is FALSE?

A) At a 5% level of significance, car speeds have no effect on the mileage.

B) At a 5% level of significance, car speeds have an effect on mileage.

C) As the speed increases by 5 units, mileage decreases by 0.85 units on average.

D) At a 1% level of significance, car speeds have an effect on mileage.

29) Consider the three scatter plots A, B & C.

(A)

(B)

(C)

Suppose you are called upon as an economist to make an accurate prediction about Y, for given a value of X and your salary would be based on how good your prediction turns out to be. Three scatterplots A, B and C are given above. Which of the three scatter plots would you prefer to be the raw data that depicts the relationship between X and Y based on which you can predict:

A) I would be indifferent as the method used for prediction remains the same irrespective of the data.

B) I would prefer the scatterplot A (between x and y1) as the raw data.

C) I would prefer the scatterplot B (between x and y2) as the raw data.

D) I would prefer the scatterplot C (between x and y3) as the raw data.

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30) Suppose you have the following two scenarios related to hypothesis testing:

Scenario 1:

Null: Mean height of boys in the class is 5 feet 6 inches
Alternative: Mean height of the boys in the class is 5 feet 7 inches
Scenario 2:

Null: Mean height of boys in the class is 5 feet 6 inches
Alternative: Mean height of the boys in the class is 5 feet 8 inches
Keeping the level of significance at 15 percent, which of the following is true:

A) Both scenarios are invalid as the level of significance is always fixed at 1 percent or 5 percent.

B) In scenario 1, the probability of rejecting the null when the null is true is higher than in scenario 2.

C) In scenario 1, probability of rejecting the null when the null is true is lower than in scenario 2.

D) In scenario 1, the probability of not rejecting the null when the null is false is lower than in scenario 2.

Section 4 - Indian Economy and Political Economy
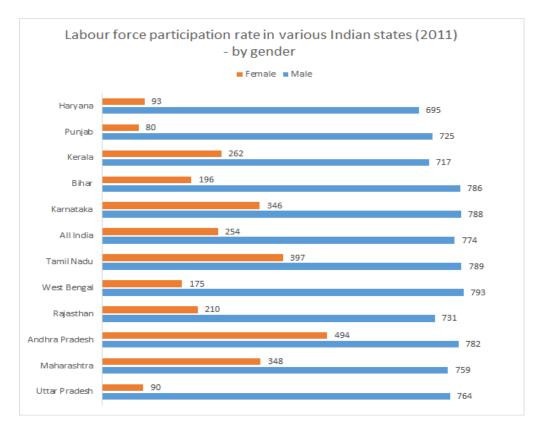
31) Why is the decade 1921-31 referred to as the year of the great divide in India?

A)   Gandhi launched his Satyagraha movement and mobilized masses all over the country.
B)   The first Indian steel industry was developed by Tata's.
C)   India's dependency on British imports started declining.
D)   Population growth rate went up significantly.

32) A special economic zone (SEZ) is an area in a country that is subject to different economic regulations than other regions within the same country. What was the main reason for implementing the SEZ act of 2005?

A) To develop backwards regions.
B) To create employment.
C) To attract Foreign Direct Investment.
D) To develop export capabilities of the country.

33) What were the primary aims of the fiscal responsibility and budget management act of 2003?

A) To control the exchange rate.
B) To attract more Foreign Direct Investment in the India economy.
C) To make the central government more prudent in its budgetary decision.
D) To give more autonomy to the RBI to control the Money Supply.

34) Which of the following statements is NOT TRUE about the Mahatma Gandhi National Rural Guarantee Act 2005?

A)   If the government fails to provide employment, it must provide unemployment allowances to those people
B)   MGNREGA aims to create durable assets (such as roads, canals, ponds and wells).
C)   MGNREGA is applicable to all regions and citizens of India.
D)   It is the largest social security programme in the world.

35) In 1979 independent India experienced the lowest growth rate in its history? What was the main reason for the fall in growth rate?

 A) OPEC price rise
 B) Industrial stagnation
 C) Monsoon Failure
 D) High Fiscal Deficit

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36) The rate of profit in Marxian analysis is calculated as:

 A) Ratio of surplus value to the total capital
 B) Ratio of surplus value to the variable capital
 C) Ratio of surplus value to the constant capital
 D) Ratio of surplus value to the organic composition of capital

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37) Which of the following is **NOT TRUE** for caste-based inequality in Indian labour market?

 A)   There exists a wage gap between different castes groups.
 B)   There continues to exist segregation across occupations between different caste groups.
 C)   India has a policy for caste-based reservations in the informal sector
 D)   The female labour force participation rate is higher among scheduled castes and scheduled tribes than among the general caste.

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38) The labour force participation rate is measured as

 A)   The proportion of employed persons out of the total working age population.
 B)   The proportion of employed persons plus those voluntarily unemployed out of the total population.
 C)   The proportion of employed persons plus those unemployed who are seeking work out of the total working age population.
 D)   The proportion of employed persons plus those willing to work but not seeking work out of the total population.

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39) Which of these is **NOT TRUE** for Indian agriculture over a period of roughly the past three decades since 1990?

 A)   The agricultural land area per capita is witnessing a falling trend.
 B)   The employment in agriculture as a percentage of total employment is witnessing a falling trend.
 C)   The share of land area used for agriculture, measured as a percentage of total land area, has remained roughly constant.
 D)   Agricultural value added has been witnessing a falling trend.

40) Which of the following statements is **NOT** correct based on the graph below?

Labour force participation rate in various Indian states (2011) - by gender

A)   The female labour force participation rate in India is lower than that in the state of Kerala.
B)   The difference in the male and female-labour force participation rate is lowest in Andhra Pradesh.
C)   The difference in the male and female-labour force participation rate is highest in Bihar.
D)   The female labour force participation rate is highest in Andhra Pradesh.

Space for Rough Work