**54**

| QUESTION PAPER SERIES CODE |
|---|
| **A** |

**Registration No. :** | | | | | |

**Centre of Exam. :** _____

**Name of Candidate :** _____

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**Signature of Invigilator**

## ENTRANCE EXAMINATION, 2016

M.A. ECONOMICS (with specialization in World Economy)

**[ Field of Study Code : EILM (202) ]**

*Time Allowed* : 3 hours *Maximum Marks* : 100

### INSTRUCTIONS FOR CANDIDATES

Candidates must read carefully the following instructions before attempting the Question Paper :

(i) Write your Name and Registration Number in the space provided for the purpose on the top of this Question Paper and in the Answer Sheet.

(ii) **Please darken the appropriate Circle of Question Paper Series Code on the Answer Sheet.**

(iii) All questions are compulsory.

(iv) Answer all 50 (fifty) questions in the Answer Sheet provided for the purpose by darkening the correct choice, i.e., (a) or (b) or (c) or (d) with BALLPOINT PEN only against the corresponding circle. Any overwriting or alteration will be treated as wrong answer.

(v) Each correct answer carries **2 (two)** marks. **There will be negative marking and 1 mark will be deducted for each wrong answer.**

(vi) Answer written by the candidates inside the Question Paper will not be evaluated.

(vii) Calculators may be used.

(viii) Please use the space provided for Rough Work.

(ix) Return the Question Paper and Answer Sheet to the Invigilator at the end of the Entrance Examination. **DO NOT FOLD THE ANSWER SHEET.**

### INSTRUCTIONS FOR MARKING ANSWERS

1. Use only Blue/Black Ballpoint Pen (do not use pencil) to darken the appropriate Circle.
2. Please darken the whole Circle.
3. Darken ONLY ONE CIRCLE for each question as shown in example below :

| Wrong | Wrong | Wrong | Wrong | Correct |
|---|---|---|---|---|
| ● ⓑ ⓒ ● | ⊘ ⓑ ⓒ ⓓ | ⊘ ⓑ ⓒ ⊘ | ◉ ⓑ ⓒ ● | ⓐ ⓑ ⓒ ● |

4. Once marked, no change in the answer is allowed.
5. Please do not make any stray marks on the Answer Sheet.
6. Please do not do any rough work on the Answer Sheet.
7. Mark your answer only in the appropriate space against the number corresponding to the question.
8. **Ensure that you have darkened the appropriate Circle of Question Paper Series Code on the Answer Sheet.**

1. Determine the absolute minimum for the following function and interval :

$$g(x) = 2x^3 + 3x^2 - 12x + 4 \text{ on } [-4, 2]$$

(a) $-4$

(b) $-2$

(c) 1

(d) 2

2. Identify the inflection points for the following function :

$$f(x) = x(6 - x)^{2/3}$$

(a) 3·6 and 6

(b) 3·6 and 7·2

(c) 6 and 7·2

(d) Only 3·6

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**SPACE FOR ROUGH WORK**

3. How many real roots the following polynomial would have?

$$f(x) = 4x^5 + x^3 + 7x - 2$$

(a) 1

(b) 3

(c) 4

(d) 5

4. We want to construct a box with a square base and we only have $6\,m^2$ of material to use in construction of the box. Assume that all the materials are used in the construction process. What is the maximum volume that the box can have?

(a) $1\,m^3$

(b) $2\,m^3$

(c) $3\,m^3$

(d) $4\,m^3$

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**SPACE FOR ROUGH WORK**

5. Determine the point(s) on $y = x^2 + 1$ that is/are closest to (0, 2).

(a) (0, 1)

(b) $\left(-\frac{1}{\sqrt{2}}, \frac{3}{2}\right), \left(\frac{1}{\sqrt{2}}, \frac{3}{2}\right)$

(c) (−2, 5), (2, 5)

(d) (−4, 17), (4, 17)

6. Determine the eigenvalues of the following matrix :

$$A = \begin{bmatrix} 8 & 6 \\ 6 & 8 \end{bmatrix}$$

(a) 2 and 14

(b) 0 and 2

(c) 2 and 16

(d) 0 and 16

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**SPACE FOR ROUGH WORK**

7. The following matrix

$$\begin{bmatrix} 2 & 6 \\ 6 & 18 \end{bmatrix}$$

is

(a) positive definite

(b) positive semidefinite

(c) negative definite

(d) negative semidefinite

8. In the following expression

$$y^2 + 4 = x^2 - 9$$

$\frac{dy}{dx}$ would be

(a) $xy$

(b) $x / y$

(c) $x + y$

(d) $x - y$

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**SPACE FOR ROUGH WORK**

9. The following limit

$$\lim_{x \to a} \frac{x^2 - a^2}{x - a}$$

would result in

(a) 0

(b) $a$

(c) $a^2$

(d) $2a$

10. The marginal cost of producing $x$ units of some commodity is $3x^2 + x + 1$. The fixed cost is 150. The total cost would be

(a) $3x^3 + x^2 + x + 150$

(b) $x^3 + x^2 + x + 150$

(c) $3x^3 + \frac{x^2}{2} + \frac{x}{2} + 150$

(d) $x^3 + \frac{x^2}{2} + x + 150$

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**SPACE FOR ROUGH WORK**

11. Consider the following distribution of incomes in country $x$ and country $y$ :

Country $x$ (2, 3, 4) Country $y$ (6, 9, 12)

Which one of the following is correct?

(a) Absolute poverty is higher in $x$ than in $y$

(b) Absolute poverty is higher in $y$ than in $x$

(c) Absolute poverty is the same in $x$ and $y$

(d) The information given is not sufficient to compare absolute poverty in $x$ and $y$

12. A steeply sloped iso-profit curve, with wages on the vertical axis and risk of injury on the horizontal axis, indicates that

(a) injury levels can be reduced easily and inexpensively

(b) it would be very expensive to increase safety in the workplace

(c) the industry is very competitive

(d) the industry will pay only small compensating differentials

**SPACE FOR ROUGH WORK**

13. On a graph of wage rates versus risk of injury, indifference curves are convex because

(a) risk of injury decreases workers' utility

(b) each additional dollar of pay increases utility more than the previous dollar

(c) utility is constant on indifference curves

(d) at low levels of risk, a worker is less willing to give up wages for increased safety

14. Which of the following is true of the prediction on the investment-to-growth link by Harrod-Domar and Solow models?

(a) In both models, capital accumulation is the main engine of growth

(b) In both models, there is no link between capital accumulation and growth

(c) Capital accumulation drives long-term growth in H-D model but not in Solow model

(d) Capital accumulation drives long-term growth in Solow model but not in H-D model

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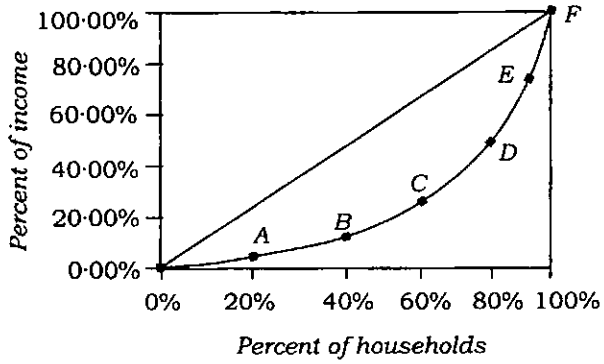
**SPACE FOR ROUGH WORK**

**15.** According to the graph given below, which of the following statements is true?




(a) The bottom 40% of households earn less than 20% of all income

(b) The bottom 20% of households earn 20% of all income

(c) The society shown here has complete income equality

(d) The more the curve sags downward, the greater is the income equality

**16.** A Less Developed Country (LDC) has an Incremental Capital Output Ratio (ICOR) of 5 and a savings rate $s = 20\%$. If current GDP is \$1000, what will be the GDP in next year?

(a) \$ 1150

(b) \$ 1040

(c) \$ 1200

(d) \$ 1030

**SPACE FOR ROUGH WORK**

17. Disguised unemployment forms

(a) when marginal revenue productivity of labor is less than wage

(b) when marginal revenue product of labor is zero with a positive wage

(c) when more people are engaged in some activity than the number of persons required for that

(d) All of the above

18. The rate of population growth exhibits tremendous inertia through time because

(a) when population growth rates are high, a relatively large fraction of the population is of child-bearing age

(b) as wages rise, the income effect dominates the substitution effect for fertility

(c) the welfare programs that spring up to care for families with large numbers of children simply encourage people to have large families

(d) parents become more risk averse as their income rises and thus opt for larger family sizes to ensure old age support

19. If Lorenz curves cross, we say there is less inequality in the case where

(a) the poorer get a larger percentage of income

(b) the poorer get a smaller percentage of income

(c) the richer are less rich

(d) We cannot say

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**SPACE FOR ROUGH WORK**

20. The user cost of a unit of capital is measured by

(a) interest rate

(b) rate of depreciation of capital

(c) interest rate plus rate of depreciation of capital

(d) interest rate plus rate of depreciation of capital minus expected rate of inflation

21. Marginal efficiency of investment is

(a) marginal productivity of investment

(b) rate of discount that equalizes expected returns on investment with cost of capital

(c) expected rate of profit

(d) expected returns on investment at the margin

22. With an increase in the net inflow of foreign capital, money supply of the economy

(a) is unchanged

(b) decreases by the amount of the inflow

(c) increases by the amount of the inflow

(d) increases by an uncertain amount

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**SPACE FOR ROUGH WORK**

23. The point of intersection of the Phillips curve with the horizontal axis representing the rate of unemployment indicates

(a) full employment

(b) natural rate of unemployment

(c) involuntary unemployment

(d) disguised unemployment

24. If $\Delta G = \Delta T$ and $\Delta G$ and $\Delta T$ respectively represent change in government expenditure and change in taxes, the value of the multiplier would be equal to

(a) one

(b) zero

(c) $\Delta G$

(d) $\Delta G + \Delta T$

25. Assuming similar exogenous parameters governing the evolution of the economy, unconditional convergence predicts that

(a) history, in the sense of different initial conditions, does not matter; all countries converge to the same level of per capita income

(b) initial conditions matter and countries will not converge to the same level of per capita income

(c) initial conditions do not matter and countries will not converge to the same level of per capita income

(d) None of the above

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**SPACE FOR ROUGH WORK**

**26.** A situation in which the lender cannot observe inherent characteristics of borrowers (e.g., riskiness), which can lead to inefficiency and credit rationing is called

(a) moral hazard

(b) limited enforcement

(c) risk management

(d) adverse selection

**27.** In the dual economy model, the phase of disguised unemployment must be associated with

(a) a horizontal supply of labor to the industrial sector

(b) an upward sloping supply of labor to the industrial sector

(c) a downward sloping supply of labor to the industrial sector

(d) The shape of the labor supply curve is irrelevant

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**SPACE FOR ROUGH WORK**

28. If the distribution of income in Joyland is (1, 2, 2, 3, 5) and in Happyland is (1, 1, 2, 3, 5), and the poverty line in both countries is 2·5, by the average income shortfall measure which country has more poverty?

(a) Joyland

(b) Happyland

(c) Poverty is the same in both countries

(d) We cannot tell from the information given

29. Suppose there are 5 workers in an economy and initially all the workers work in the traditional sector at a wage equal to 1 (call this initial period, period 0). In each subsequent period, one worker migrates from the traditional sector to the modern sector where wages are equal to 4. Assuming that the number of workers remains constant, then in period 5 all the workers are in the modern sector. As migration takes place, the Gini coefficient of inequality

(a) at first rises and then falls

(b) at first falls and then rises

(c) decreases continuously

(d) increases continuously

30. A complete ranking of all feasible allocations that are made possible by the scarce economic resources of an economy is achievable by employing

(a) the Pareto criteria

(b) the Walras law

(c) a social welfare function

(d) All of the above

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**SPACE FOR ROUGH WORK**

31. Which of the following conditions of Pareto efficiency is violated by an indirect tax such as the VAT?

(a) Equalization of the marginal rates of substitution across consumers

(b) Equalization of the marginal rates of technical substitution across producers

(c) Equalization of the marginal rate of substitution with the marginal rate of product transformation

(d) All of the above

32. An externality arises

(a) when property rights are not well-defined over some good

(b) due to non-rivalry in the consumption of some good

(c) due to rivalry in the consumption of some good

(d) All of the above

**SPACE FOR ROUGH WORK**

33. Which of the following addresses redistribution issues to promote the equity objectives of the planner?

(a) The first fundamental theorem of welfare economics

(b) The second fundamental theorem of welfare economics

(c) The Walras law

(d) The Pareto criterion

34. In the presence of asymmetric and incomplete information about wealth distribution in the economy, which of the following policy instruments should the government use to promote its equity objective?

(a) A system of indirect taxes

(b) A system of personalized lump-sum taxes and transfers

(c) A uniform lump-sum tax or/and transfer

(d) None of the above

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**SPACE FOR ROUGH WORK**

**35.** The production possibilities of two countries, Homeland and Foreign, capable of producing two goods, cloth and wheat, are given as follows :

| | *Output per labor year* | |
|---|---|---|
| *Country* | *Cloth* | *Wheat* |
| Homeland | 250 | 200 |
| Foreign | 300 | 400 |

Then each country can benefit if

(a) Homeland specializes in the production and export of cloth, while importing wheat from the Foreign country

(b) Foreign country specializes in the production and export of cloth, while importing wheat from the Homeland country

(c) Homeland and Foreign country both specialize in wheat production in order to maximize world production of wheat

(d) There is no scope for specialization and trade

**36.** In the above question, Homeland and Foreign would be willing to trade with each other if the relative price of cloth is set at

(a) 1·5

(b) 1

(c) 0·5

(d) None of the above, as there is no scope for trade

**SPACE FOR ROUGH WORK**

37. In the Heckscher-Ohlin world, international trade in commodities will lead to equalization of relative and absolute factor prices provided there is

(a) perfect competition in commodity and factor markets

(b) technologies of production which are identical across countries

(c) constant returns to scale in production of all commodities

(d) All of the above

38. When a small capital-abundant country (exporting the capital-intensive commodity) imposes an import tariff on the labor-intensive commodity, then

(a) owners of capital experience in a loss in earnings

(b) wage of the labor increases

(c) Both (a) and (b)

(d) None of the above

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**SPACE FOR ROUGH WORK**

**39.** An expansion of the service sector of an economy is most likely to affect the current account balance favourably at a given terms of trade via its impact on

(a) exports of commodities

(b) imports of commodities

(c) invisible income

(d) Cannot say anything

**40.** Let the demand curve faced by a monopolist be the following :

$$D(p) = \begin{matrix} 0 & p > 20 \\ \frac{100}{p} & p \leq 20 \end{matrix}$$

where $p$ is price. Its cost function is given by $C(Q) = Q$, where $Q$ is the output. What is the profit maximizing choice of output?

(a) 20

(b) 15

(c) 5

(d) None of the above

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**SPACE FOR ROUGH WORK**

**41.** Let the cost function of a monopolist be given by $C(Q) = cQ$, where $Q$ is the output. Also let the monopolist face a linear demand function, $P(Q) = A - bQ$. The government imposes a quantity tax of 6 per unit of output. How much does the price rise?

(a) 6

(b) 3

(c) 2

(d) None of the above

**42.** Let the utility function be given by $u(x, y) = \ln x + y$, where $x$ and $y$ are two goods. Let prices of two goods be given as follows :

$$p_x = 2, p_y = 1$$

Calculate the utility maximizing choice of $x$ and $y$ for (*i*) income = 10 and (*ii*) income = 20.

(a) (*i*) $x = 5, y = 5$; (*ii*) $x = 10, y = 10$

(b) (*i*) $x = 3, y = 7$; (*ii*) $x = 6, y = 14$

(c) (*i*) $x = \frac{1}{2}, y = 9$; (*ii*) $x = \frac{1}{2}, y = 19$

(d) None of the above

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**SPACE FOR ROUGH WORK**

**43.** Consider the utility function $u(x, y) = \min\{2x + y, x + 2y\}$. Let $p_x, p_y$ denote prices of two goods. The utility maximizing choice is $x = 0$ if

(a) $p_x > 2p_y$

(b) $p_x > p_y$

(c) $p_x < p_y$

(d) None of the above

**44.** In country $Z$, cigarettes are forbidden, so people trade cigarettes in a black market. The cigarette demand is $Q_D = 12 - P$ and the cigarette supply is $Q_s = 2P$. The government becomes aware of the black market and reinforces the police so that half of the cigarette supply would be seized and destroyed. How does the consumer surplus change between the two situations?

(a) Remains the same

(b) Decreases by 10

(c) Decreases by 14

(d) None of the above

**SPACE FOR ROUGH WORK**

45. The table given below shows bushels of wheat and yards of cloth that the US and India can produce with one unit labor under four different situations :

| | *Case A* | | *Case B* | | *Case C* | | *Case D* | |
|---|---|---|---|---|---|---|---|---|
| | US | India | US | India | US | India | US | India |
| *Wheat* (kg/man) | 4 | 1 | 4 | 3 | 4 | 1 | 4 | 2 |
| *Cloth* (yard/man) | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 1 |

Which of the following cases illustrate that the Adam Smith principle of trade according to absolute advantage is incorrect when using the principle of comparative advantage?

(a) *A* and *D*

(b) *B* and *C*

(c) *A* and *C*

(d) *B* and *D*

46. In the Heckscher-Ohlin model of trade, which of the following is a necessary assumption for trade to follow expected patterns?

(a) Constant returns to scale in production

(b) Non-factor intensity reversal

(c) Similar demand patterns in both countries

(d) None of the above

**SPACE FOR ROUGH WORK**

47. $A$ and $B$ are two independent events with probability that both occur is $\frac{1}{8}$ and neither of them occur is $\frac{3}{8}$. If probability of $A$'s occurrence is less than that of $B$'s occurrence, then the probability of $A$'s occurrence is

(a) $\frac{1}{4}$

(b) $\frac{1}{3}$

(c) $\frac{1}{8}$

(d) $\frac{1}{5}$

48. A group of 250 items is divided into two subgroups, first consisting of 100 items and the second 150. The first group has a mean 15 and standard deviation (SD) 3. The mean and SD of the whole group is 15·6 and $\sqrt{13 \cdot 44}$ respectively. The SD of the second group, then, is

(a) 3

(b) 4

(c) undefined

(d) infinity

**SPACE FOR ROUGH WORK**

**49.** Let $f(x_1, x_2) = 21x_1^2x_2^3$, for $0 < x_1 < x_2 < 1$, and 0 elsewhere, be the joint probability density function of $X_1$ and $X_2$. The conditional mean and variance of $X_1$ given $X_2 = x_2, 0 < x_2 < 1$ are

(a) $4x_2$ and $6x_2^2$

(b) 0·3 and 0·8

(c) 0·1 and 4

(d) $\frac{3}{4}x_2$ and $\frac{3}{80}x_2^2$

**50.** If the random variable $X$ is uniformly distributed with mean 1 and variance $\frac{4}{3}$, then $\Pr\{X < 0\}$ is

(a) $\frac{2}{3}$

(b) $\frac{1}{4}$

(c) 0

(d) 1

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**SPACE FOR ROUGH WORK**

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