



New Delhi
SAMPLE QUESTIONS
M.Sc. Economics Entrance Test

Instructions

1. The duration of the written examination is of one hour of MCQ pattern.
2. The subject specific test will be of 50 marks
3. Each section will consist of 25 question with two sections: Part A-Mathematics (compulsory) and Part B- Economics (for those with B.A. (Hons.)/B.Sc. (Hons.) in Economics) or Indian Economy (for those with a Bachelor's degree in any other discipline)
4. There will be no negative marks for incorrect answers
5. Sample questions are given below:

PART A (Mathematics)

1. For what value of x, the following matrix is singular?

$$\begin{bmatrix} 5-x & x+1 \\ 2 & 4 \end{bmatrix}$$

- (a) 0
- (b) 5
- (c) 3
- (d) 1

2. Determine the characteristic roots of the matrix $\begin{bmatrix} 0 & 1 & 2 \\ 1 & 0 & -1 \\ 1 & -1 & 0 \end{bmatrix}$

- (a) $1, -\frac{1}{2} \pm \frac{\sqrt{13}}{2}$
- (b) $2, -\frac{1}{2} \pm \frac{\sqrt{13}}{2}$
- (c) $-1, -\frac{1}{2} \pm \frac{\sqrt{13}}{2}$
- (d) $-2, -\frac{1}{2} \pm \frac{\sqrt{13}}{2}$

3. Let A be a 3x3 matrix. Which of the following conditions does NOT imply that A is invertible?

- (a) -A is invertible
- (b) There exists a positive integer k such that $\det(A^k) \neq 0$.
- (c) There exists a positive integer k such that $(I - A)^k = 0$ where I is the 3x3 identity matrix.
- (d) There exist 3 linearly independent vectors $v_1, v_2, v_3 \in \mathbb{R}^3$ such that $Av_i \neq 0$ for each i

4. In xyz plane, what are the coordinates of the point closest to the origin?

- (a) (0, 0, 1)
- (b) (3/7, 3/14, 9/14)

- (c) $(7/15, 8/15, 1/15)$
- (d) $(1, 1, 1/3)$

5. What is the 19th derivative of $\frac{x-1}{e^{-x}}$?

- (a) $(19 - x)e^{-x}$
- (b) $(20 - x)e^{-x}$
- (c) $(x - 19)e^{-x}$
- (d) $(x - 20)e^{-x}$

6. $(1 + i)^{10} =$

- (a) 1
- (b) $32i$
- (c) i
- (d) 32

7. Ram and Ramola will each randomly choose one of the 10 integers from 1 to 10. What is the probability that neither integer chosen will be the square of the other?

- (a) 0.64
- (b) 0.72
- (c) 0.95
- (d) 0.81

8. 50% of the families in a certain community own a car, 45% of the families own a scooter and 30% of the families do not own either car or scooter. How many families own both a scooter and a car?

- (a) 95%
- (b) 45%
- (c) 25%
- (d) 70%

9. Let X have the standard normal distribution. Then the random variable $Y=X^2$ has the

- (a) Standard Normal distribution
- (b) Normal distribution with mean μ^2 and standard deviation σ^2
- (c) Chi square distribution with m degrees of freedom
- (d) Chi square distribution with 1 degree of freedom

10. If the primal problem is given by,

$$\text{Maximize } z = 3x_1 + 4x_2,$$

$$\text{subject to } x_1 + x_2 \leq 12, 2x_1 + 3x_2 \leq 21, x_1 \leq 8, x_2 \leq 6 \text{ and } x_1, x_2 \geq 0$$

Then the dual of this primal is

(a) Minimize $w = 21v_1 + 12v_2 + 8v_3 + 6v_4$

$$\text{subject to } v_1 + 2v_2 + v_3 \geq 4,$$

$$v_1 + 3v_2 + v_4 \geq 3,$$

$$v_1, v_2, v_3, v_4 \geq 0$$

(b) Minimize $w = 8v_1 + 12v_2 + 6v_3 + 8v_4$

subject to $v_1 + 2v_2 + v_3 \geq 3$,

$v_1 + 3v_2 + v_4 \geq 4$,

$v_1, v_2, v_3, v_4 \geq 0$

(c) Minimize $w = 12v_1 + 21v_2 + 8v_3 + 6v_4$

subject to $v_1 + 2v_2 + v_3 \geq 3$,

$v_1 + 3v_2 + v_4 \geq 4$,

$v_1, v_2, v_3, v_4 \geq 0$

(d) None of the above

PART B (Economics)

1. Processed and piped water is
 - (a) A public goods
 - (b) A private good
 - (c) A private bad
 - (d) A public bad

2. Analyze the impacts of reduction in tax rate and government purchases on budget surplus/deficit:

Suppose: Initial tax rate, $t_0=0.2$
New tax rate, $t_1=0.1$
Initial level of income, $Y_0 = 100$
Marginal propensity to consume, $c = 0.8$
Change in government spending, $\Delta G = -10$

 - (a) There is budget surplus of 0.71
 - (b) There is budget surplus of 1.71
 - (c) There is budget deficit of -1.71
 - (d) There is budget deficit of -0.71

3. Points above and to the right of the IS curve are
 - (a) Points of excess demand in the goods market.
 - (b) Points of excess demand in the money market.
 - (c) Points of excess supply in the goods market.
 - (d) Points of excess supply in the money market.

4. In an open economy with perfect capital mobility and fixed exchange rates, an open market operation will-
 - (a) Increase output and reduce interest rate
 - (b) Increase the money supply
 - (c) Lower the trade deficit
 - (d) Change the composition of the monetary base

5. According to Lewis,
- Economic development is constrained by inadequate savings and investment, among other factors
 - Economic development is constrained by inadequate supply of labour, among other factors
 - Economic development is constrained by the inadequacy of capital, among other factors
 - All the above
6. Let $u(x)$ be a utility function representing consumer's preferences over a set X and let $g(\cdot)$ be an increasing real valued function over \mathbb{R} . The consumer's chosen bundles given prices and income for the utility functions $u(x)$ and $g(u(x))$
- Must be different
 - Must be identical
 - Different for some price and income
 - None of the above
7. Which one of these statements is true:
- The classical aggregate supply curve is vertical.
 - The Keynesian aggregate supply curve is vertical.
 - The Phillips curve can be vertical.
 - The Laffer curve is not vertical.
8. ceteris paribus, higher velocity of money circulation leads to
- an increase in both the real and the nominal demand for money
 - an increase in the real demand for money and decrease in the nominal demand for money
 - a decrease in the real demand for money and an increase in the nominal demand for money
 - a decrease in both the real and the nominal demand for money
9. Suppose that an empirical study involving 100 countries over the last three decades finds a significant negative relationship between initial values per capita income and growth rates of per capita income, then
- One can conclude that there is unconditional convergence among these countries
 - One can conclude that there is conditional convergence among these countries
 - One can conclude that there is no convergence among these countries
 - One cannot draw any conclusions because there is insufficient information
10. Consider a case of two countries, India and Bangladesh. Assume that labour is the only factor of production. The following table shows the labour requirement for production of one unit of rice and shirt in India and Bangladesh.

Table: Unit Labour Requirements

Country	Shirt	Rice
India	10	5
Bangladesh	20	25

Which of the following statements is true:

- (a) India has a comparative advantage in production of rice
- (b) Bangladesh has comparative advantage in production of rice
- (c) India has absolute advantage in production of rice
- (d) Bangladesh has absolute advantage in production of rice

PART C (Indian Economy)

1. The vehicle of growth of the Indian economy after economic reforms in the nineties was:
 - (a) Agricultural sector
 - (b) Services sector
 - (c) Industrial sector
 - (d) All the above
2. Goods and Services Tax is an
 - (a) Indirect tax
 - (b) Direct tax
 - (c) A combination of direct and indirect tax
 - (d) Income tax
3. Poverty in India is estimated based on:
 - (a) Income
 - (b) Extent of owned land
 - (c) Type of house
 - (d) Calorie intake
4. Which of the following policy variables is used by the RBI to tackle inflation in the economy?
 - (a) Money supply
 - (b) Interest rate
 - (c) Output
 - (d) Consumption
5. For targeting in the public distribution system in India, households are classified into:
 - (a) Above poverty line, below poverty line and poorest of the poor
 - (b) Below poverty line and above poverty line
 - (c) Poorest of the poor and above poverty line
 - (d) None of the above
6. Which one of the following institutions has the constitutional mandate to deliberate on distribution of financial resource between the Union government and the state governments?
 - (a) Pay Commission
 - (b) Finance Commission
 - (c) Niti Aayog
 - (d) Reserve Bank of India
7. Goods and Services Tax (GST) is
 - (a) A per unit tax
 - (b) A lump-sum tax
 - (c) A value-added tax

- (d) A specific tax
8. What are masala bonds?
- (a) Dollar denominated bonds issued by the US to Indian buyers
 - (b) Euro denominated bonds issued by the EU to Indian buyers
 - (c) Rupee denominated bonds issued outside India
 - (d) (a) and (b) are both correct.
9. The term “Open Market Operations” pertains to
- (a) Ease of participation in global markets
 - (b) Increased transparency in stock market transactions
 - (c) Buying and selling of government bonds
 - (d) Cross border portfolio investments
10. Which among the following is not included in the National Action Plan on Climate Change of Government of India?
- (a) National Mission on Sustainable Habitat
 - (b) National Mission on Sustainable Development
 - (c) National Mission on Sustainable Agriculture
 - (d) National Mission for Sustaining the Himalayan ecosystem