

Central Universities Entrance Examination (CUCET - 2011)

**M. A. Economics**

(Offered by CU Rajasthan, CU Kashmir, CU Kerala, CU Karnataka)

**M. Sc. (Financial Economics)**

(Offered by CU Tamilnadu)

**M.Sc. (General Economics)**

(Offered by CU Tamilnadu)

**The Question paper will have common Part A and subject specific Part B**

**Part A:** It will be of 45 minutes duration and will have 35 Multiple Choice Questions (MCQs), with four options: only one correct. Part A is intended to test the applicants; general awareness, reasoning, basic language skills (English) and analytical skills.

**Part B:** contains four sections covering simple mathematics, statistics, advanced mathematics and economics. While the first three sections contain 15 questions each, the last section on economics will contain 20 questions. All questions carry equal marks and there are no negative markings.

**Syllabus/ Topics for Subject Specific Part B:**

Mathematics – Plus 2 level Mathematics covering functions, linear Algebra, Limits, differential and integral calculus.

Statistics – Basic statistics of Plus 2 level covering measures of central tendency, probability distribution – normal etc.

Advanced Mathematics – Graduate level mathematics covering linear algebra, limits and derivatives, optimization, integration etc.

Economics – Graduate level economics covering topics in micro- and macro-economics and Indian economic development.

**Sample Questions (PART B)**

**Mathematics – Sample Questions**

1.	Find the third order derivative of $Y = 5 X^3$ : <input type="checkbox"/> (a) 30 <input type="checkbox"/> (b) $15 X^2$ <input type="checkbox"/> (c) $30X$ <input type="checkbox"/> (d) $5X^2$
2.	$A = \begin{bmatrix} 0 & 0 & 0 \\ 1 & 2 & 3 \\ 2 & 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 1 & -2 \\ -1 & 0 \\ 2 & 1 \end{bmatrix}$ Find AB

	<input type="checkbox"/> (a) $\begin{bmatrix} 0 & 0 \\ 5 & 1 \\ 7 & 0 \end{bmatrix}$ <input type="checkbox"/> (b) $\begin{bmatrix} 1 & -2 \\ 3 & -5 \\ 4 & 9 \end{bmatrix}$ <input type="checkbox"/> (c) $\begin{bmatrix} 3 & -2 \\ 6 & -5 \\ 5 & -7 \end{bmatrix}$ <input type="checkbox"/> (d) $\begin{bmatrix} 2 & -2 \\ 5 & 3 \\ 7 & 4 \end{bmatrix}$
3.	$\lim_{x \rightarrow 5} (3x^3 + 5x^2 - 2x + 3)$ equals: <input type="checkbox"/> (a) 439 <input type="checkbox"/> (b) 493 <input type="checkbox"/> (c) 394 <input type="checkbox"/> (d) 934
4.	If $A = \begin{pmatrix} 2 & 3 & 1 \\ 3 & 4 & 1 \\ 3 & 7 & 2 \end{pmatrix}$ then $A^{-1}A$ is <input type="checkbox"/> (a) 0 <input type="checkbox"/> (b) A <input type="checkbox"/> (c) I <input type="checkbox"/> (d) $A^2$
5.	The point in the interval (3, 5] is <input type="checkbox"/> (a) 3 <input type="checkbox"/> (b) 5.3 <input type="checkbox"/> (c) 0 <input type="checkbox"/> (d) 4.35

### Statistics – Sample Questions

6.	Probability of sure event is <input type="checkbox"/> (a) 1 <input type="checkbox"/> (b) 0 <input type="checkbox"/> (c) -1 <input type="checkbox"/> (d) S
7.	A single letter is selected at random from the word PROBABILITY The probability that it is not a vowel is <input type="checkbox"/> (a) 3/11 <input type="checkbox"/> (b) 2/11 <input type="checkbox"/> (c) 4/11 <input type="checkbox"/> (d) 0
8.	If A and B are independent event, then $P(A \cap B)$ is <input type="checkbox"/> (a) $P(A) P(B)$ <input type="checkbox"/> (b) $P(A) + P(B)$ <input type="checkbox"/> (c) $P(A/B)$ <input type="checkbox"/> (d) $P(B) - P(A)$
9.	Which expression gives the probability $P\left(\frac{1}{2} < X < 1\right)$ using $F(x)$ , given $0 < x < 1$ <input type="checkbox"/> (a) $P\left(\frac{1}{2} < X < 1\right) = F\left(\frac{1}{2}\right) - F(1)$ <input type="checkbox"/> (b) $P\left(\frac{1}{2} < X < 1\right) = F(1) - F\left(\frac{1}{2}\right)$ <input type="checkbox"/> (c) $P\left(\frac{1}{2} < X < 1\right) = F(1) + F\left(\frac{1}{2}\right)$ <input type="checkbox"/> (d) $P\left(\frac{1}{2} < X < 1\right) = F(1) - F(0)$
10.	If a constant value 4 is subtracted from each observation of a set, the value of the variance is <input type="checkbox"/> (a) reduced by 4 <input type="checkbox"/> (b) reduced by 16 <input type="checkbox"/> (c) reduced by 2 <input type="checkbox"/> (d) unaltered

### Advanced Mathematics – Sample Questions

11.	Let $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 0 & -1 \\ 3 & 4 & 5 \end{bmatrix}$ . Which of the following is true? <input type="checkbox"/> (a) A is invertible since $\det(A) = 0$ <input type="checkbox"/> (b) A is not invertible since $\det(A) = 0$ <input type="checkbox"/> (c) A is invertible since $\det(A) \neq 0$ <input type="checkbox"/> (d) A is not invertible since $\det(A) \neq 0$
12.	Which of the following polynomials leaves a remainder when divided by $x+2$ ? <input type="checkbox"/> (a) $r(x) = (x+2)^{12}$ <input type="checkbox"/> (d) $p(x) = x^2 - 4$ <input type="checkbox"/> (c) $s(x) = x^4 + 3x^2 + 1$ <input type="checkbox"/> (d) $q(x) = -x^3 + 8x^2 + 3x - 34$

13.	The characteristic roots of the matrix $A = \begin{pmatrix} 6 & 6 \\ 6 & -3 \end{pmatrix}$ are: <input type="checkbox"/> (a) Both positive <input type="checkbox"/> (b) Both negative <input type="checkbox"/> (c) One positive and one negative <input type="checkbox"/> (d) None of the above
14.	The value of $\lim_{x \rightarrow \infty} (\sqrt{x^2 + 1} - \sqrt{x^2 - 1})$ is <input type="checkbox"/> (a) -1 <input type="checkbox"/> (b) 1 <input type="checkbox"/> (c) 0 <input type="checkbox"/> (d) none of these
15.	At compound interest if a certain sum of money doubles in n years then the amount will be four fold in <input type="checkbox"/> (a) $2n^2$ years <input type="checkbox"/> (b) $n^2$ years <input type="checkbox"/> (c) $4n$ years <input type="checkbox"/> (d) $2n$ years

### **Economics – Sample Questions**

16.	The classical <i>Quantity Theory of Money</i> assumes that: <input type="checkbox"/> (a) income is constant. <input type="checkbox"/> (b) velocity is constant. <input type="checkbox"/> (c) prices are constant. <input type="checkbox"/> (d) the money supply is constant.
17.	Assume that apples cost Rs.0.50 in 2002 and Re.1 in 2007, whereas oranges cost Re.1 in 2002 and Rs.0.50 in 2007. If 10 apples and 5 oranges were purchased in 2002, and 5 apples and 10 oranges were purchased in 2007, the CPI for 2007, using 2002 as the base year, is: <input type="checkbox"/> (a) 0.75. <input type="checkbox"/> (b) 0.80 <input type="checkbox"/> (c) 1 <input type="checkbox"/> (d) 1.25
18.	The aggregate demand curve tells us possible: <input type="checkbox"/> (a) combinations of $M$ and $Y$ for a given value of $P$ . <input type="checkbox"/> (b) combinations of $M$ and $P$ for a given value of $Y$ . <input type="checkbox"/> (c) combinations of $P$ and $Y$ for a given value of $M$ . <input type="checkbox"/> (d) results if the Federal Reserve reduces the money supply.
19.	Assume that we have a demand curve of the form $\ln q = a - b \ln p$ . Then the elasticity of demand is <input type="checkbox"/> (a) Always increasing with $p$ <input type="checkbox"/> (b) Decreasing with $p$ <input type="checkbox"/> (c) Constant <input type="checkbox"/> (d) None of the above.
20.	In the Kinked Demand Curve Model, suppose MC curve shifts upward in the discontinuous range of MR curve. Which one of the following is correct? At equilibrium, <input type="checkbox"/> (a) price rises but quantity remains the same <input type="checkbox"/> (b) price and quantity both remain the same <input type="checkbox"/> (c) quantity rises but price remains the same <input type="checkbox"/> (d) price and quantity both rise