

## **Rules and pattern of entrance Examination for MA (Economics), 2017**

1. The total marks in the entrance test will be 100. There will be 50 questions in MCQ Pattern. A correct answer will be awarded 2 marks and an incorrect marks will be awarded (-0.5) marks. Correct answer option shall have to be marked by black/blue ball point pen.
2. The duration of the examination is two and half hours.
3. The 50 questions will be distributed over four sections: (A) Micro economics (13 questions); (B) Macroeconomics (13 questions); (C) Mathematical Economics (12 questions) and (D) Statistics and Econometrics (12 questions).
4. A composite score for each examinee will be computed on the basis of the following formula:  
Composite Score = Marks obtained in the written examination +25.  
Merit list shall be prepared on the basis of the composite score.
5. In case of ties in the composite score, ranking will be done on the basis of number of incorrect answers. Yet unresolved ties shall be broken on the basis of aggregate percentage of marks obtained in Economics (Honours/ Major) at the undergraduate level.

M.A. Admission Test 2017

**Economics**

Model questions

**Section A: Microeconomics**

- 1) Consider a multi plant firm which wants to produce an output  $Q$  by using both its plants, each of which faces a total variable cost curve which is upward sloping and convex to the origin. Which rule will determine the cost minimizing allocation of  $Q$  between the two plants?
- (i) Equality of marginal costs
  - (ii) Equality of total variable costs
  - (iii) Equality of total (variable +fixed) costs
  - (iv) None of the above

**Correct answer is as marked in black.**

- 2) Let  $u(x,y) = v(x) + y$  be the utility function of a consumer where  $x$  and  $y$  are amounts of consumption for two commodities. Engel curve for  $x$  is
- i) Upward sloping
  - ii) Horizontal
  - iii) Vertical
  - iv) None of the above

**Correct answer: (iii)**

- 3) Suppose that 50 people live on a street and that each of them is willing to pay Rs. 2 for each extra streetlight, regardless of the number of streetlights provided. If the cost of providing  $x$  streetlights is given by  $c(x) = 2x^2$ , what is the Pareto efficient number of streetlights to provide?
- (i) 50
  - (ii) 25
  - (iii) 100
  - (iv) 20

**Correct answer: (ii)**

## Section B: Macroeconomics

- 4) In a simple Keynesian economy, autonomous consumption = 100, MPC =  $\frac{3}{4}$ , initial tax rate =  $\frac{1}{5}$ , autonomous investment = 100, Government expenditure = 100. If the effect of a rise in Government expenditure of 100 is to be completely neutralised then how much should the tax rate change?
- (a)  $\frac{6}{30}$
  - (b)  $\frac{8}{45}$
  - (c)  $\frac{7}{35}$
  - (d)  $\frac{5}{36}$

**Correct answer: (b)**

- 5) Consider the classical model. Suppose private saving and investment functions are  $S = sYD$ , and  $I = I_0 - b.r$  respectively, where  $s$ ,  $I_0$  and  $b$  are positive constants and  $YD$  denotes disposable income. Government lends out its saving and finances its deficit by borrowing. Government's expenditure and tax revenue are given by  $G_0$  and  $tY$  respectively. Production function is given by  $Y = L$  and supply of labour is given by  $L = L_0$ , where  $L_0$  is fixed. In this model,

**a)** Labour demand ( $L^d$ ) function is given by

- (i)  $L^d = 1$
- (ii)  $L^d$  is undefined
- (iii)  $L^d$  is perfectly elastic at the real wage equal to unity
- (iv)  $L^d$  is a decreasing function of the real wage rate.

**Correct answer: (iii)**

**b)** In equilibrium the following level of output will be produced

- (i)  $Y = 1$
- (ii)  $Y = L_0$
- (iii) Equilibrium  $Y$  is undefined.
- (iv) There are more than one equilibrium level of output.

**Correct answer: (ii)**

c) Supply of loanable funds is given by

(i)  $I_0 - br$

(ii)  $sY$

(iii)  $s(1-t)Y + tY$

(iv)  $s(1-t)Y + (tY - G_0)$

**Correct answer: (iv)**

d) Equilibrium interest rate is given by

(i) It is undefined

(ii)  $[I_0 + G_0 - (s+t)L_0]/b$

(iii)  $[I_0 + G_0 - (s(1-t) + t)L_0]/b$

(iv)  $[I_0 - sL_0]/b$

**Correct answer: (iii)**

e) If in the model given above, tax rate goes up

(i) Equilibrium  $Y$  and aggregate saving will fall.

(ii) Equilibrium  $Y$  will fall, but equilibrium  $I$  will remain unaffected.

(iii) Aggregate investment will go up, but  $Y$  will fall.

(iv) Aggregate investment will go up, but  $Y$  will remain unaffected.

**Correct answer: (iv)**

f) If in the model given above money supply is  $M_0$  and the equilibrium price level is 2

(i) equilibrium money wage rate is 2 and the income velocity of circulation of money is  $2L_0/M_0$ .

(ii) equilibrium money wage rate is 2 and the income velocity of circulation of money is  $M_0/2L_0$ .

(iii) equilibrium money wage rate is 1 and the income velocity of circulation of money is  $2L_0/M_0$ .

(iv) equilibrium money wage rate is 1 and the income velocity of circulation of money is  $M_0/2L_0$ .

**Correct answer : (i)**

### Section C: Mathematical Economics

6) Let The total cost function of the product be

$$C = 2x \left( \frac{x+7}{x+5} \right) + 7$$

- a) MC is always rising
- b) MC first rises then falls
- c) MC is always falling
- d) MC first falls then rises

**Correct answer is as marked in black**

7) The angle between two vectors  $\mathbf{u} = (5,2)$  and  $\mathbf{v} = (2,-5)$

- a)  $45^\circ$
- b)  $60^\circ$
- c)  $90^\circ$
- d)  $30^\circ$

**Correct answer is as marked in black**

8) Consider the following function.  $y = ax^3 + bx^2 + x$  It has a critical value at  $x=1$  with

$$y|_{x=1} = -1$$

value of the function is

- a)  $a=3, b=6$
- b)  $a=1, b=-3$
- c)  $a=-5, b=3$
- d)  $a=3, b=-5$

**Correct answer is as marked in black**

9) An integral may be interpreted as:

- a) The inverse of the objective function.
- b) The area under a curve.
- c) The Lagrangian multiplier
- d) A monotonic function

**Correct answer is as marked in black**

10) The solution of the Following differential equation is

$$\dot{x} + 3x = t^2$$

$$x = Ce^{-3t} + \frac{1}{3}t^2 - \frac{2}{9}t + \frac{2}{27} \quad \bullet$$

a)

$$x = Ce^{-9t} + \frac{1}{6}t^2 - \frac{2}{9}t + \frac{2}{7} \quad \circ$$

b)

$$x = Ce^{-3t} + \frac{1}{4}t^2 - \frac{7}{11}t + \frac{12}{27} \quad \circ$$

c)

$$x = Ce^{-9t} + \frac{1}{9}t^2 - \frac{5}{12}t + \frac{2}{7} \quad \circ$$

d)

**Correct answer is as marked in black**

### Section D: Statistics and Econometrics

11)  $(x_1, x_2)$  is a random sample from  $N(0, \sigma^2)$ . If  $c(x_1 - x_2)^2$  is an unbiased estimator of  $\sigma^2$  then what is the value of  $c$ ?

- (a) 1
- (b) 2
- (c)  $\frac{1}{2}$
- (d) 0

**Correct answer: (c)**

12) Consider the model

where  $s$  follow standard classical linear regression model properties.  $\beta_1 = 0$  for the first 20 observations and  $\beta_1 = 1$  for the remaining 30 observations.  $\text{var}(\beta_1) = 300$  i. What is the value of  $\text{var}(\beta_1)$  if  $\text{cov}(\beta_1, \beta_2) = -15$ ?

- (a) 15
- (b) 20
- (c) 25
- (d) None of the above.

**Correct answer: (c)**