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QUESTION PAPER SERIES CODE
<b>B</b>

Centre Name : \_\_\_\_\_

Roll No. : \_\_\_\_\_

Name of Candidate : \_\_\_\_\_

**S A U**

**Entrance Test for MA (Development Economics), 2015**

**[ PROGRAMME CODE : MEC ]**

Time : 3 hours

Maximum Marks : 100

**INSTRUCTIONS FOR CANDIDATES**

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

- (i) Write your Name, Roll Number and Centre Name in the space provided for the purpose on the top of this Question Paper and in the OMR/Answer Sheet.
- (ii) This Question Paper has Three Parts : Part—A, Part—B and Part—C.
- (iii) Part—A (Objective-type) has 20 questions of 1 mark each. All questions are compulsory.
- (iv) Part—B (Objective-type) has 20 questions of 1 mark each. All questions are compulsory.
- (v) Part—C (Objective-type) has 30 questions of 2 marks each. All questions are compulsory.
- (vi) **One-fourth ( $\frac{1}{4}$ ) of marks assigned to any question will be deducted for wrong answers.**
- (vii) **Please darken the appropriate Circle of 'Question Paper Series Code' and 'Programme Code' on the OMR/Answer Sheet in the space provided.**
- (viii) Part—A, Part—B and Part—C (Multiple Choice) questions should be answered on the OMR/Answer Sheet.
- (ix) Answers written by the candidates inside the Question Paper will **NOT** be evaluated.
- (x) Calculators and Log Tables may be used. Mobile Phones are **NOT** allowed.
- (xi) Pages at the end have been provided for Rough Work.
- (xii) **Return the Question Paper and the OMR/Answer Sheet to the Invigilator at the end of the Entrance Test.**
- (xiii) **DO NOT FOLD THE OMR/ANSWER SHEET.**

**/1-B**

**INSTRUCTIONS FOR MARKING ANSWERS IN THE 'OMR SHEET'**

Use BLUE/BLACK Ballpoint Pen Only

- Please ensure that you have darkened the appropriate Circle of 'Question Paper Series Code' and 'Programme Code' on the OMR Sheet in the space provided.

**Example :**

**Question Paper Series Code**

Write Question Paper Series Code A or B and darken appropriate circle.

	A or B
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(A)

**Programme Code**

Write Programme Code out of 14 codes given and darken appropriate circle.

Write Programme Code

MEC	<input checked="" type="radio"/>	MAM	<input type="radio"/>	PCS	<input type="radio"/>
MSO	<input type="radio"/>	MLS	<input type="radio"/>	PBT	<input type="radio"/>
MIR	<input type="radio"/>	PEC	<input type="radio"/>	PAM	<input type="radio"/>
MCS	<input type="radio"/>	PSO	<input type="radio"/>	PLS	<input type="radio"/>
MBT	<input type="radio"/>	PIR	<input type="radio"/>		<input type="radio"/>

- Use only Blue/Black Ballpoint Pen to darken the Circle. Do not use Pencil to darken the Circle for Final Answer.
- Please darken the whole Circle.
- Darken ONLY ONE CIRCLE for each question as shown below in the example :

**Example :**

Wrong	Wrong	Wrong	Wrong	Correct
<input checked="" type="radio"/> (b) (c) <input checked="" type="radio"/>	<input checked="" type="radio"/> (b) (c) (d)	<input checked="" type="radio"/> (b) (c) <input checked="" type="radio"/>	<input checked="" type="radio"/> (b) (c) <input checked="" type="radio"/>	(a) (b) (c) <input checked="" type="radio"/>

- Once marked, no change in the answer is allowed.
- Please do not make any stray marks on the OMR Sheet.
- Please do not do any rough work on the OMR Sheet.
- Mark your answer only in the appropriate circle against the number corresponding to the question.
- One-fourth (¼) of marks assigned to any question will be deducted for wrong answers.**
- Write your six-digit Roll Number in small boxes provided for the purpose; and also darken appropriate circle corresponding to respective digits of your Roll Number as shown in the example below.

**Example :**

**ROLL NUMBER**

1	3	5	7	2	0
<input checked="" type="radio"/>	(1)	(1)	(1)	(1)	(1)
(2)	(2)	(2)	(2)	<input checked="" type="radio"/>	(2)
(3)	<input checked="" type="radio"/>	(3)	(3)	(3)	(3)
(4)	(4)	(4)	(4)	(4)	(4)
(5)	(5)	<input checked="" type="radio"/>	(5)	(5)	(5)
(6)	(6)	(6)	(6)	(6)	(6)
(7)	(7)	(7)	<input checked="" type="radio"/>	(7)	(7)
(8)	(8)	(8)	(8)	(8)	(8)
(9)	(9)	(9)	(9)	(9)	(9)
(0)	(0)	(0)	(0)	(0)	<input checked="" type="radio"/>

**PART—A**

1.  $\ln\left(\frac{e^3}{e^4}\right)$  is equal to

- (a)  $\frac{3}{4}$
- (b)  $\ln 3 - \ln 4$
- (c)  $\ln 3 / \ln 4$
- (d)  $-1$

2. The solution for  $|x - 2| = 5$  is given by

- (a) 7 and 3
- (b)  $-3$  and 7
- (c) 3
- (d)  $\sqrt{21}$

3.  $\lim_{x \rightarrow 2} \frac{4 - x^2}{x^2 - 3x + 2} =$

- (a) 4
- (b) 0
- (c)  $-4$
- (d)  $-1$

4.  $\frac{d}{dx}(\ln e^{2x}) =$

- (a)  $\frac{1}{e^{2x}}$
- (b)  $\frac{2}{e^{2x}}$
- (c)  $2x$
- (d) 2

5. The graph of  $y = 5x^4 - x^5$  has a point of inflection at

- (a) (3, 162) only
- (b) (4, 256) only
- (c) (0, 0) and (3, 162)
- (d) (0, 0) and (4, 256)

6. Let  $x = A[a(t)]^\alpha [b(t)]^\beta$ , where  $a(t)$  and  $b(t)$  are positive-valued differentiable functions of  $t$  and  $A$ ,  $\alpha$  and  $\beta$  are constants. Then  $\frac{\dot{x}}{x}$  is

(a)  $\alpha \frac{\dot{a}}{a} + \beta \frac{\dot{b}}{b}$

(b)  $2A \left[ \alpha \frac{\dot{a}}{a} + \beta \frac{\dot{b}}{b} \right]$

(c)  $\alpha a(t)^{\alpha-1} \dot{a} + \beta b(t)^{\beta-1} \dot{b}$

(d) None of the above

7. Let  $f(x)$  and  $g(x)$  be two real-valued functions of  $x$ . Then  $\frac{d}{dx} [[f(x)]^m [g(x)]^n]$  is

(a)  $[mf'(x)g(x) + nf(x)g'(x)][f(x)]^{m-1}[g(x)]^n$

(b)  $[mf'(x)g(x) + nf(x)g'(x)][f(x)]^{m-1}[g(x)]^{n-1}$

(c)  $[mf'(x)g(x) + nf(x)g'(x)][f(x)]^{1-m}[g(x)]^{1-n}$

(d) None of the above

8. If  $f$  and  $g$  are both real-valued convex functions, then  $h(x) = \max\{f(x), g(x)\}$  is

(a) quasiconvex

(b) convex

(c) both quasiconvex and quasiconcave

(d) quasiconvex but not convex

9. If

$$f(x) = \begin{cases} \frac{x}{|x|} & \text{when } x \neq 0 \\ 1 & \text{when } x = 0 \end{cases}$$

then

(a)  $f(x)$  is continuous at  $x = 0$

(b)  $f(x)$  is continuous but not differentiable at  $x = 0$

(c)  $f(x)$  is discontinuous at  $x = 0$  but differentiable

(d)  $f(x)$  is neither continuous nor differentiable

10. If

$$\begin{vmatrix} x+\alpha & \beta & \gamma \\ \alpha & x+\beta & \gamma \\ \alpha & \beta & x+\gamma \end{vmatrix} = 0$$

then  $x$  is equal to

- (a)  $0, -(\alpha + \beta + \gamma)$
  - (b)  $0, (\alpha + \beta + \gamma)$
  - (c)  $1, (\alpha + \beta + \gamma)$
  - (d)  $0, (\alpha^2 + \beta^2 + \gamma^2)$
11. The partial derivative  $\frac{\partial z}{\partial y}$  of the implicit function  $\ln x + \ln y - \ln z = e^y$  is
- (a)  $\frac{z}{y} - e^y$
  - (b)  $\frac{z}{y} - ze^y$
  - (c)  $\frac{ze^y}{y} - e^y$
  - (d)  $\frac{z}{y} - e^z e^y$

12. Let

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 1 & 0 & -1 \\ 3 & 4 & 5 \end{pmatrix}$$

Then which of the following statements is correct?

- (a)  $A$  is invertible since  $\det A = 0$
- (b)  $A$  is not invertible since  $\det A = 0$
- (c)  $A$  is invertible since  $\det A \neq 0$
- (d)  $A$  is not invertible since  $\det A \neq 0$

13. The limit of the expression  $\lim_{x \rightarrow 4} \frac{\sqrt{x} - 2}{x - 4}$  is

- (a) 0.2
- (b) 0.25
- (c) 2
- (d) 0.5

14. The derivative of  $e^x \ln(x^2)$  is

- (a)  $e^x \ln(2x) + \frac{2}{x} e^x$
- (b)  $e^x \ln(x^2) + \frac{2}{x} e^x$
- (c)  $e^{2x} \ln(x^2) + \frac{2}{x} e^x$
- (d)  $e^{2x} \ln(2x) + e^x \ln(x)$

15. If

$$\begin{cases} f(x) = \frac{\sqrt{2x+5} - \sqrt{x+7}}{x-2}, & \text{for } x \neq 2 \\ f(2) = k \end{cases}$$

and if  $f$  is continuous at  $x = 2$ , then  $k =$

- (a) 0
- (b)  $\frac{1}{6}$
- (c)  $\frac{1}{3}$
- (d) 1

16. Simplification of the expression  $\frac{[\sqrt{27}(\sqrt{3})^3]}{9}$  yields

- (a) 1
- (b) 3
- (c) 9
- (d) 12

17. While dividing each entry in a data by a non-zero number  $a$ , the arithmetic mean of the new data
- (a) is multiplied by  $a$
  - (b) does not change
  - (c) is divided by  $a$
  - (d) is diminished by  $a$
18. For what values of the real number  $a$  does the quadratic equation  $x^2 + ax + a$  has distinct real roots?
- (a)  $a < 4$
  - (b)  $a > 4$
  - (c)  $a = 4$
  - (d) For all values of  $a$
19. For what value of  $k$  will  $x + \frac{k}{x}$  have a relative maximum at  $x = -2$ ?
- (a)  $-4$
  - (b)  $-2$
  - (c)  $2$
  - (d)  $4$
20. If  $F(x) = x^{\frac{1}{2}}x^{-\frac{2}{3}}$ , then  $F(2^6) =$
- (a)  $1$
  - (b)  $\frac{1}{2}$
  - (c)  $2$
  - (d)  $4$

**PART—B**

21. For the series  $a + ar + ar^2 + \dots + ar^{n-1}$ , the sum of  $n$  terms when  $r = 1$  is

(a)  $S_n = a \left( \frac{r^n - 1}{r - 1} \right)$

(b)  $S_n = a \left( \frac{1 - r^n}{1 - r} \right)$

(c)  $S_n = na$

(d)  $S_n = \frac{a}{1 - r}$

22. Which term of the series 5, 8, 11, ... is 95?

(a) 10th term

(b) 31st term

(c) 29th term

(d) 40th term

23. If  $\alpha, \beta$  are the roots of the equation  $ax^2 + 3x + 2 = 0$ ,  $a < 0$ , then  $\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha}$  is greater than

(a) 0

(b) 1

(c) 2

(d) None of the above

24.  $A$  and  $B$  are two non-empty sets. Let  $A - B = \{x \in A \mid x \notin B\}$  and  $A + B = (A - B) \cup (B - A)$ . Consider the following statements :

Statement 1 :  $A + B = B$  implies  $A \subseteq B$

Statement 2 :  $A + B = \emptyset$  implies  $A = B$

Statement 3 :  $A + B = A \cup B$  implies  $A \cap B = \emptyset$

How many of the above statements are correct?

(a) 0

(b) 1

(c) 2

(d) 3



25. Ignoring twins and other multiple births, assume babies born at a hospital are independent events with the probability that a baby is a boy and the probability that a baby is a girl both equal to 0.5. If the first 4 children born are girls, what is the probability the next born child is a boy?
- (a) 0.50
  - (b) 0.75
  - (c) 0.80
  - (d) 1.00
26. There are three children in a room, aged three, four, and five. If a four-year-old child enters the room, the
- (a) mean age will stay the same but the standard deviation will decrease
  - (b) mean age will stay the same but the standard deviation will increase
  - (c) mean age and standard deviation will increase
  - (d) mean age and standard deviation will stay the same
27. Consider an experiment in which a fair coin is tossed until a head is obtained for the first time. If this experiment is performed three times, what is the probability that exactly the same number of tosses will be required for each of the three performances?
- (a)  $\frac{1}{3}$
  - (b)  $\frac{1}{7}$
  - (c)  $\frac{1}{8}$
  - (d)  $\frac{2}{5}$
28. For a negatively skewed distribution, which of the following relations holds?
- (a) Mean = Median = Mode
  - (b) Mean > Median > Mode
  - (c) Mode > Median > Mean
  - (d) Mode > Mean > Median

29. Which of the following countries in South Asia has the highest GDP per capita?
- (a) India
  - (b) Maldives
  - (c) Bhutan
  - (d) Sri Lanka
30. The Capability Approach relates to the theory of
- (a) demographic transition
  - (b) human capital
  - (c) technological innovation
  - (d) human development
31. According to the Prebisch-Singer thesis, if a country exports primary products and imports manufactured goods, in the long run it will experience
- (a) a secular decline in its international terms of trade
  - (b) an initial increase followed by a decline in its international terms of trade
  - (c) a stagnant international terms of trade
  - (d) a secular increase in its international terms of trade
32. Based on the standard international poverty line, the maximum number of poor people is located in
- (a) Sub-Saharan Africa
  - (b) Central America
  - (c) South Asia
  - (d) West Asia
33. Consider snowfall in the Himalayas (on  $y$ -axis) and chocolates (on  $x$ -axis) as two goods. Mr.  $X$  considers snowfall anywhere as neutral commodity, whereas he loves eating chocolates. The shape of the indifference curve is
- (a) a vertical line
  - (b) a horizontal line
  - (c) a downward sloping curve
  - (d) None of the above

34. Increase in the price of one good leads to a decrease in demand for another good. Therefore, the two goods are
- (a) substitutes
  - (b) complements
  - (c) unrelated
  - (d) normal goods
35. Suppose a tax is imposed in a market with perfectly elastic market supply curve. The entire tax burden is
- (a) paid by the seller
  - (b) paid by the buyer
  - (c) shared equally by buyer and seller
  - (d) paid mostly by the seller
36. Consider a production function  $f(x, y) = x^{\frac{1}{2}}y^{\frac{1}{2}}$ , where  $x$  and  $y$  are factors of production. The production function exhibits
- (a) increasing returns to scale
  - (b) constant returns to scale
  - (c) decreasing returns to scale
  - (d) variable returns to scale

37. Which of the following parameters in the Solow growth model without technological progress is endogenous?
- (a) Savings rate
  - (b) Capital-output ratio
  - (c) Population growth
  - (d) Investment rate
38. In a closed economy IS-LM framework, fiscal policy will be more effective if
- (a) responsiveness of the demand for money to income is high
  - (b) responsiveness of the demand for money to interest rate is low
  - (c) responsiveness of the demand for money to income is low
  - (d) Both (a) and (b)
39. If agents form their expectations of future prices by extrapolating historical data, then
- (a) they will always underestimate future prices
  - (b) they will always overestimate future prices
  - (c) they might make systematic errors in expectations
  - (d) their expectations will be rational and most accurate on an average
40. In an open economy with free capital flows, the Central Bank can control
- (a) the rate of interest but not the exchange rate of its currency
  - (b) the exchange rate of its currency but not the rate of interest
  - (c) both the rate of interest as well as the exchange rate of its currency by simultaneously setting both of them
  - (d) either the rate of interest or the exchange rate of its currency but not both

**PART—C**

41. Suppose a person lives for two periods. His current period income is ₹ 42,000 and he possesses an asset worth ₹ 18,000. His future income is expected to be ₹ 33,000 and the real rate of interest at which he can borrow or save is 10 percent. His current and future maximum consumption will be
- (a) ₹ 90,000 and ₹ 99,000
  - (b) ₹ 42,000 and ₹ 33,000
  - (c) ₹ 75,000 in both the periods
  - (d) ₹ 60,000 and ₹ 51,000
42. The traditional Keynesian models dominant in the 1950s and 1960s suggested an inflation-unemployment trade-off. In other words, there was a social cost of disinflation in terms of higher level of unemployment. However, if agents form their expectations rationally in a forward-looking manner, and if the policymakers follow a credible and dynamically consistent policy to reduce the rate of inflation, then it might be shown that policies to reduce inflation
- (a) are ineffective
  - (b) are effective with much lower social cost than predicted by the traditional Keynesian models
  - (c) are effective only if monetary authorities do not announce their policies beforehand
  - (d) might also reduce unemployment, and hence be doubly beneficial
43. 'Quantitative easing (QE)' involves the Central Bank
- (a) announcing a lower rate of interest to stimulate investments
  - (b) buying short-term government bonds to finance budget deficit
  - (c) buying financial assets from commercial banks and private financial institutions
  - (d) buying foreign currency from the foreign exchange market to increase its foreign exchange reserves
44. On January 15, 2015, the Central Bank of Switzerland abandoned the ceiling to appreciation of Swiss franc to the euro it had imposed earlier. This was immediately followed by an appreciation of Swiss franc against euro by nearly 30 percent. Given that Switzerland is an oil importer and exporter of manufactured products. This will have the following impact on producers in Switzerland
- (a) A strong currency will reduce the cost of production by reducing the cost of importing inputs for Swiss producers
  - (b) A strong currency will make the products of Swiss exporters less competitive in international market
  - (c) Both (a) and (b)
  - (d) Neither (a) nor (b)

Next **TWO** questions are based on the following information :

Consider an economy where the aggregate output is produced by using two factors,  $K$  and  $L$ , using a production function  $Y = K^\alpha L^{1-\alpha}$ . At every point of time, both factors are fully employed. A constant proportion  $s$  of total output is saved and automatically invested at each point in time, leading to augmentation of capital stock. However, capital is also subject to depreciation at a rate  $\delta$ . Labour force grows at a constant rate  $n$ .

**45.** The steady-state level of per capita output is given by

(a)  $s\left(\frac{K}{L}\right)^\alpha - (n + \delta)\frac{K}{L}$

(b)  $\left(\frac{s}{n + \delta}\right)^{\frac{1}{1-\alpha}}$

(c)  $\left(\frac{s}{n + \delta}\right)^{\frac{\alpha}{1-\alpha}}$

(d) Cannot be determined from the given information

**46.** The optimal savings rate which will maximize the per capita consumption level at the steady state is given by

(a)  $\alpha$

(b)  $n + \delta$

(c)  $\alpha(n + \delta)$

(d)  $\left(\frac{s}{n + \delta}\right)^{\frac{1}{1-\alpha}}$

**47.** The function  $Y = \frac{100}{x} + 4x$  has

(a) the maximum point where  $x = 5$

(b) the minimum point where  $x = 5$

(c) the maximum point where  $x = -5$

(d) the minimum point where  $x = 5$  and a maximum where  $x = -5$

**48.** The limit of the expression  $\lim_{x \rightarrow 0} \frac{e^x - e^{-x}}{x}$  is

(a) 2

(b) 8

(c) 4

(d) 12

49. Assume that  $f$  is a differentiable function with  $f(x)$  not equal to zero. Let  $e$  denote the elasticity of  $f(x)$  with respect to  $x$ . Then the elasticity of  $x^5 f(x)$  equals
- (a)  $5 \cdot e$
  - (b)  $5(e + 1)$
  - (c)  $e^5$
  - (d)  $5 + e$

50. The following is the coefficient matrix of a homogenous system of equations :

$$\begin{pmatrix} 2 & 1 \\ 1 & 4 \\ 0 & 3 \end{pmatrix}$$

The system will have

- (a) infinitely many solutions
- (b) no solution
- (c) unique solution
- (d) two solutions

51. The series  $1 + \frac{1}{1+x} + \frac{1}{(1+x)^2} + \dots$  converges to

- (a)  $\frac{1}{1+x}$
- (b)  $1 + \frac{1}{x}$
- (c)  $1 - \frac{n}{x}$
- (d) None of the above

52. The cubic equation  $y = kx^3 - (k+1)x^2 + (2-k)x - k$  has a minima at  $x = 1$ , when

- (a)  $k > 0$
- (b)  $0 < k < 1$
- (c)  $k > \frac{1}{2}$
- (d)  $k < 3$

53. Let  $X$  and  $Y$  be two independent random variables such that  $E(X) = E(Y) = 4$  and  $\text{var}(X) = \text{var}(Y) = 2$ . If  $U = 3X - 2Y$ , then

- (a)  $E(U) = 4$  and  $\text{var}(U) = 2$
- (b)  $E(U) = 4$  and  $\text{var}(U) = 4$
- (c)  $E(U) = 2$  and  $\text{var}(U) = 20$
- (d)  $E(U) = 4$  and  $\text{var}(U) = 26$

54. Three different machines  $M1$ ,  $M2$  and  $M3$  were used for producing a large batch of similar manufactured items. Suppose that 20 percent of the items were produced by machine  $M1$ , 30 percent by machine  $M2$ , and 50 percent by machine  $M3$ . Suppose further that 1 percent of the items produced by machine  $M1$  are defective, that 2 percent of the items produced by machine  $M2$  are defective and that 3 percent of the items produced by machine  $M3$  are defective. Finally suppose that one item is selected at random from the entire batch and it is found to be defective. The probability that this item was produced by machine  $M2$  is
- (a) 0.45  
 (b) 0.34  
 (c) 0.12  
 (d) 0.26

55. Suppose that a random variable  $X$  has a continuous distribution with the probability function :

$$f(x) = \begin{cases} \frac{1}{8}x & \text{for } 0 < x < 4 \\ 0 & \text{otherwise} \end{cases}$$

The value of  $t$  such that  $\Pr(X \geq t) = \frac{1}{2}$  is

- (a)  $\sqrt{8}$   
 (b)  $\sqrt{3}$   
 (c)  $2\sqrt{3}$   
 (d)  $4\sqrt{3}$
56. Let  $X$  be a random variable with the probability density function  $f(x) = c|x|$  for  $-1 < x < 1$  and 0 otherwise. The value of  $c$  is
- (a) 0  
 (b) 1  
 (c) 0.5  
 (d) 2
57. Kurtosis can be measured by the
- (a) second moment  
 (b) third moment  
 (c) variance and the mean  
 (d) fourth moment
58. Which of the following statements is not correct?
- (a)  $R^2$  always increases with an increase in number of explanatory variables  
 (b) A negative  $\bar{R}^2$  is possible  
 (c)  $\bar{R}^2$  is a better measure of goodness of fit than  $R^2$   
 (d)  $R^2$  always increases with a decrease in number of explanatory variables



59. For a country, the head count ratio of income poverty was 28 percent in 2014. If the per capita income of the country grows annually by 5 percent for five years, the head count ratio in 2019
- (a) will decrease to 21 percent
  - (b) will decrease to less than 21 percent
  - (c) will decrease to 23 percent
  - (d) may increase, decrease or remain unchanged
60. Suppose a study of major countries finds a significant trend towards convergence in real per capita income across countries. This result implies that the Gini ratio of real per capita income for the combined population of these countries
- (a) will increase
  - (b) will decrease
  - (c) stay the same
  - (d) cannot be determined from the given information
61. The interest rates charged by microfinance institutions (MFIs) tend to be substantially higher than those charged by commercial banks, because
- (a) MFIs cannot afford to charge low interest rates
  - (b) the MFI borrowers can afford to pay higher interest rates as such loans are more productively used
  - (c) MFI loans are more risky without collaterals
  - (d) Both (a) and (c)
62. Countries *A* and *B* have the same mean income, but the range of income is higher in *A* than in *B*, while the Gini ratio of income distribution is higher in *B* than in *A*. The above implies that
- (a) income inequality is greater in country *A*
  - (b) income inequality is greater in country *B*
  - (c) on an average, both the countries have the same level of income inequality
  - (d) with the given information, it is not possible to compare the levels of inequality between the two countries

Next **TWO** questions are based on the following paragraphs :

In a closed economy the size of the industrial sector is a function of agricultural productivity. Agriculture has to be capable of producing the surplus food and raw materials consumed in the industrial sector, and it is the affluent state of the farmers that enables them to be a market for industrial products. If the domestic market is too small it is still possible to support an industrial sector by exporting manufactures and importing food and raw materials. But it is difficult to begin industrialization by exporting manufactures. Usually one begins by selling in familiar and protected home market and passes on to exporting only after one has learnt to make one's costs competitive.

The distinguishing feature of the Industrial Revolution at the end of the eighteenth century is that it began in the country with the highest agricultural productivity—Great Britain—which therefore already had a large industrial sector. The Industrial Revolution did not create an industrial sector where none had been before. It transformed an industrial sector which already existed, by introducing new ways of making the same old things. The revolution spread rapidly in other countries which were also revolutionizing their agriculture, specially in Western Europe and North America. But countries of low agricultural productivity, like Central and Southern Europe, or Latin America or China had rather small industrial sectors, and there it made rather slow progress.

If the smallness of the market was one constraint, due to low agricultural productivity, the absence of the investment climate was another. Western Europe had been creating a capitalist environment for at least a century; a whole set of new people, of ideas and of institutions which did not exist in Asia or Africa, or even for the most part in Latin America, despite their closer cultural heritage. Power in these countries—as also in Central and Southern Europe—was still closely concentrated in the hands of the landed class, who benefited from cheap imports, and saw no reason to support the emergence of a new industrial class. There was no industrial entrepreneurship. Of course the agricultural countries were just as capable of sprouting an industrial complex of skills, institutions and ideas, but this would take time. In the meantime it was relatively easy to respond to the other opportunity that the industrial revolution opened up, namely to export agricultural products, especially as transport costs came down. There was no lack of traders to travel through the countryside collecting small parcels of produce from thousands of small farmers; or of landowners, domestic and foreign, ready to man plantations with imported Indian or Chinese labour.

And so the world divided : into the countries which industrialized and exported manufactures, and the other countries which exported agricultural products. The speed of this adjustment, especially in the second half of the nineteenth century, created an illusion. It came to be an article of faith, in Western Europe that the tropical countries had comparative advantage in

agriculture, when in fact, as Indian production soon began to show, there were much bigger differences in food production per head than in modern industrial production per head as between tropical and temperate countries.

[From *The Evolution of the International Economic Order* by W. Arthur Lewis]

- 63.** According to the section above, agricultural productivity constrains industrial growth in a closed economy, because
- (a) agriculture provides food and raw materials for the industrial sector
  - (b) agriculture provides food, raw materials and generates demand for the industrial sector
  - (c) agriculture provides food, raw materials and sometimes generates demand for industrial sector
  - (d) None of the above
- 64.** Industrial revolution did not take place in the tropical countries during the second half of the nineteenth century due to
- (a) agricultural productivity not being high enough in these countries
  - (b) comparative advantage of these countries in agricultural commodities
  - (c) lack of trading opportunities
  - (d) Both (a) and (b)
- 65.** A risk-averse individual is offered a choice between a direct cash payment of \$2000 or accepting a lottery that pays \$10000 with probability 25 percent and \$500 with probability 75 percent. Then which of the following is true?
- (a) Individual might accept the lottery depending upon the degree of risk aversion
  - (b) Individual will accept the direct cash payment
  - (c) Individual will be indifferent between the lottery and the direct cash payment
  - (d) None of the above
- 66.** Suppose a large firm facing decreasing returns to scale is broken up into multiple small firms of equal size. Then the combined profits of all the small units would be
- (a) the same as that of the large firm
  - (b) smaller than that of the large firm
  - (c) larger than that of the large firm
  - (d) Result is uncertain

67. The long-run cost function is  $c(q) = q^2 + 1$ . The long-run supply function of the firm is
- (a)  $q = p$  for all price levels  $p$
  - (b)  $q = \frac{p}{2}$  for all price levels  $p$
  - (c)  $q = \frac{p}{4}$  for all price levels  $p \geq 2$  and  $q = 0$  for  $p < 2$
  - (d)  $q = \frac{p}{2}$  for all price levels  $p \geq 2$  and  $q = 0$  for  $p < 2$
68. For a monopolist, demand curve is  $q = 200/p$  and cost curve is  $c(q) = q^2$ . The optimal level of output for the monopolist is
- (a)  $q = 100$
  - (b)  $q = 50$
  - (c)  $q = 10$
  - (d) None of the above
69. The own price elasticity of demand for a commodity is 1.5. A drop in the price of the commodity from \$3.00 to \$2.80 would result in
- (a) an increase in sales by 15 percent
  - (b) a decrease in sales by 10 percent
  - (c) an increase in sales by 10 percent
  - (d) no effect on sales
70.  $A$  and  $B$  consume two goods 1 and 2. The utility function for  $A$  is  $u_A = 2x_{A1} + x_{A2}$  and that for  $B$  is  $u_B = x_{B1}x_{B2}$ . They trade only with each other. Which of the following is an equilibrium price configuration?
- (a)  $p_1 = \frac{1}{2}, p_2 = 1$
  - (b)  $p_1 = 1, p_2 = 2$
  - (c)  $p_1 = 2, p_2 = 1$
  - (d)  $p_1 = p_2 = 1$

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