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049

**ENTRANCE EXAMINATION, 2011**  
M.A. ECONOMICS  
[ Field of Study Code : ECOM (216) ]

Maximum Marks : 100

Time Allowed : 3 hours

### 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 the 100 questions in the Answer Sheet provided for the purpose by darkening the correct choice, i.e., (a) or (b) or (c) or (d) with a BALLPOINT PEN only against the corresponding circle. Any overwriting or alteration will be treated as wrong answer.
- (v) Each correct answer carries 1 mark. There will be negative marking and 1/4 mark will be deducted for each wrong answer.
- (vi) Answer written by the candidates inside the Question Paper will not be evaluated.
- (vii) Pages at the end have been provided for Rough Work.
- (viii) 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
<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d	<input type="radio"/> a <input checked="" type="radio"/> b <input type="radio"/> c <input type="radio"/> d	<input type="radio"/> a <input type="radio"/> b <input checked="" type="radio"/> c <input type="radio"/> d	<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input checked="" type="radio"/> d	<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input checked="" type="radio"/> d

- 4. Once marked, no change in the answer is allowed.
- 5. Please do not make any stray marks on the Answer Sheet.
- 6. Do rough work only on the pages provided for this purpose.
- 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. Suppose two fair, six-sided, dice are rolled. The probability of obtaining a value from the first dice that is at least two greater than the value from the second dice is
  - (a)  $\frac{1}{6}$
  - (b)  $\frac{9}{12}$
  - (c)  $\frac{5}{18}$
  - (d)  $\frac{1}{18}$
  
2. If the radius of a circle is increased by 20%, then the area is increased by
  - (a) 44%
  - (b) 120%
  - (c) 144%
  - (d) 40%
  
3. Let  $x$ ,  $y$  and  $z$  be distinct integers.  $x$  and  $y$  are odd and positive, and  $z$  is even and positive. Which one of the following statements cannot be true?
  - (a)  $(x-z)^2y$  is even
  - (b)  $(x-z)y^2$  is odd
  - (c)  $(x-z)y$  is odd
  - (d)  $(x-y)^2z$  is even
  
4. A line that is 13 units long has  $(4, 1)$  as one of the endpoints. Which of the following could be the other endpoint?
  - (a)  $(-1, 13)$
  - (b)  $(9, 14)$
  - (c)  $(3, 7)$
  - (d)  $(5, 12)$

5. If  $p$  and  $q$  are the roots of the equation  $x^2 - bx + c = 0$ , then what is the equation if the roots are  $(pq + p + q)$  and  $(pq - p - q)$ ?
- (a)  $x^2 - 2cx + (c^2 - b^2) = 0$   
(b)  $x^2 - 2bx + (c^2 + b^2) = 0$   
(c)  $bcx^2 - 2(b + c)x + c^2 = 0$   
(d)  $x^2 + 2bx - (c^2 - b^2) = 0$
6. The domain of the function  $f(x) = \frac{5}{\sqrt{x+7}}$  is
- (a)  $(-7, \infty)$   
(b)  $[-7, \infty)$   
(c)  $(-\infty, \infty)$   
(d)  $(-\infty, -7) \cup (-7, \infty)$
7. Suppose we know that  $|a| < 3$ . Which of the following conditions is enough to imply that  $|b| < 5$ ?
- (a)  $|a + b| < 8$   
(b)  $2 < |a - b| < 8$   
(c)  $|a - b| \leq 2$   
(d)  $3 < |a - b| < 5$
8. A population consists of the following seven numbers :  
2003; 1999; 2001; 1997; 2000; 2005; 1995  
The variance of the population is
- (a) 11.6  
(b) 10  
(c) 2010  
(d) None of the above
9. Suppose a person's utility function is given by  $u(x, y)$ . If good  $x$  and good  $y$  are perfect substitutes, then the indifference curves are
- (a) straight lines  
(b) L-shaped  
(c) U-shaped  
(d) None of the above

10. If  $f(x) = \frac{1}{x^2}$  is integrated over the interval  $[1, 2]$ , then one gets
- (a) 0
  - (b)  $\log 2$
  - (c)  $\frac{1}{2}$
  - (d) 1
11. Consider an economy wherein equilibrium level of aggregate income ( $Y$ ) is the sum of aggregate investment expenditure ( $I$ ) and aggregate consumption expenditure ( $C$ ). For values of  $Y \leq 1500$ ,  $C = 200 + 0.6Y$  and any amount of aggregate income in excess of 1500 currency units is entirely saved in the economy. If the full employment level of  $Y = 1750$ , the minimum value of  $I$  necessary to ensure full employment in the economy is
- (a) 500
  - (b) 550
  - (c) 600
  - (d) None of the above

Question Nos. 12–15 are to be answered on the basis of the following information :

Consider an economy in which only three goods  $X$ ,  $Y$  and  $Z$  are produced.  $X$  and  $Y$  are consumption goods and the output of  $Z$  in a year is used up in production of  $X$  and  $Y$  in that year. The following table gives the unit prices ( $p_X$ ,  $p_Y$  and  $p_Z$  rupees respectively) and the number of units produced ( $q_X$ ,  $q_Y$  and  $q_Z$  respectively) of each of the goods for three years I, II and III :

Year	$p_X$	$q_X$	$p_Y$	$q_Y$	$p_Z$	$q_Z$
I	1	2	2	5	1	2
II	1.5	3	2	6	1.5	4
III	1.5	6	3	6	2	5

12. What is the GDP (in rupees) at current prices in year II?
- (a) 10.5
  - (b) 16.5
  - (c) 22.5
  - (d) 28.5

13. If year I is the base year, what is the GDP (in rupees) at constant prices in year III?
- (a) 13
  - (b) 14
  - (c) 17
  - (d) 18
14. If year I is the base year, what is the value of the GDP deflator in year III?
- (a) 100
  - (b) 130.77 (approx.)
  - (c) 141.67 (approx.)
  - (d) 150
15. What is the rate of growth of real GDP (base year I) in year III?
- (a) 10%
  - (b) 13.67% (approx.)
  - (c) 18.18% (approx.)
  - (d) 20%

Question Nos. 16-22 are to be answered on the basis of the following information :

Let  $Y$  : aggregate real output per year,  $P$  : the price level,  $C$  : money value of aggregate consumption expenditure per year,  $I$  : money value of aggregate investment expenditure per year,  $L$  : aggregate employment (in labour hours per year),  $L^*$  : total labour supply (in labour hours per year) and  $w$  : hourly money wage rate. Let  $W$  denote the money value of aggregate wage income per year and  $R$  the money value of aggregate non-wage income per year. Consider an economy in which labour is homogeneous, the aggregate productivity of labour ( $Y/L$ ) is a constant  $a$  and the price level (when output is below its full employment level) is a factor  $m$  times the wage cost per unit of aggregate output. The price at full employment is always greater than or equal to that at below full employment. In equilibrium,  $PY = C + I$ .

16. If  $I = 4000$ ,  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , what is the full employment level of output in the economy?
- (a) 125
  - (b) 625
  - (c) 24000
  - (d) None of the above

17. If  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , and output is below its full employment level, what is the increase in nominal income per unit increase in investment expenditure in the economy?
- (a) 2
  - (b) 4
  - (c) 8
  - (d) 16
18. If  $I = 4000$ ,  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , what is the price level in the economy?
- (a) 0.83 (approx.)
  - (b) 0.93 (approx.)
  - (c) 1.07 (approx.)
  - (d) 1.16 (approx.)
19. If  $I = 4000$ ,  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , what is the fraction of total labour supply which remains unemployed in the economy?
- (a) 5%
  - (b) 10%
  - (c) 12.5%
  - (d) 25%
20. If  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , but  $I$  increases from 4000 to 5000, what is the resulting change in the price level in the economy?
- (a) 0%
  - (b) 5% increase
  - (c) 10% increase
  - (d) 20% increase
21. If  $C = 1000 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , but  $I$  increases from 4000 to 7000, what is the resulting change in the price level in the economy?
- (a) 0%
  - (b) 10% increase
  - (c) 20% increase
  - (d) 50% increase

22. If  $C = 1200 + 0.8W + 0.6R$ ,  $w = 10$ ,  $m = \frac{4}{3}$ ,  $a = 16$ ,  $L^* = 2000$ , but  $I$  increases from 4000 to 7000, what is the change in the share of non-wage income in the total income of the economy?
- (a) No change  
(b) Increases by  $\frac{1}{8}$   
(c) Increases by  $\frac{1}{6}$   
(d) Increases by  $\frac{1}{5}$
23. Suppose in a closed economy with no government expenditure and taxation the investment function is given by  $I = 2000 + 0.1Y - 8000r$  and the saving function is given by  $S = 1000 + 0.2Y + 2000r$  ( $Y$  denotes aggregate income and  $r$  the nominal rate of interest). The economy is subject to a liquidity trap at  $r = 0.01$ . What is the maximum equilibrium value of  $Y$  possible in this economy?
- (a) 7800  
(b) 9000  
(c) 11000  
(d) None of the above

Questions Nos. 24–27 are to be answered on the basis of the following information :

Suppose there is a consumer whose life is divisible into three periods which follow each other consecutively—youth, middle age and post-retirement age. The length of each period is 20 years and the consumer earns no labour income on post-retirement. In his youth the consumer earns labour income at the rate of Rs 2,500 per month. In his middle age the consumer's earnings are uncertain—there is a 25% probability that he will earn at the rate of Rs 5,000 per month, alternatively, he will earn at the rate of Rs 10,000 per month. The consumer gets to know what his rate of earnings in middle age will be at the end of his youth. Assume that the consumer expects to pay no taxes, the nominal rate of return on saving and the rate of interest is always zero and there is no inflation expected throughout his life.

24. What is the expected value of the consumer's earnings (Rs in lakhs) in middle age?
- (a) 18  
(b) 20  
(c) 30  
(d) None of the above

25. What is the present discounted value of the consumer's expected lifetime labour income (Rs in lakhs)?
- (a) 24
  - (b) 26
  - (c) 27
  - (d) 36
26. Suppose the consumer's attitude towards risk is as follows :  
He prefers an alternative which promises him an amount of Rs  $X$  with probability  $p$  and an amount of Rs  $Y$  ( $X > Y$ ) with probability  $1 - p$  to an alternative which promises him an amount of Rs  $Z$  for sure if and only if  $Z < Y + (2p/3)(X - Y)$ . An insurance company approaches the consumer in his youth and offers to pay Rs 7,615 per month to the consumer in his middle age in exchange for his flow of income during that period. Will the consumer accept the offer?
- (a) Yes
  - (b) No
  - (c) The consumer will be indifferent between accepting and declining the offer
  - (d) The consumer's acceptance is a random event
27. Suppose the consumer can borrow any amount in a year but must repay the loan out of future labour income. The consumer wishes to end his life with no assets or liabilities. He plans to have the same constant flow of consumption in the last two periods of his life and wishes to minimize the difference between the expected rate of consumption in these two periods and a constant rate of consumption during his youth. What should be his savings per month (in Rs) during his youth?
- (a) -750
  - (b) -1,250
  - (c) 250
  - (d) None of the above
28. In a bookshop, the sales of scientific books increased by 40% while the sales of engineering books decreased by 50% from 2001 to 2002. If  $R$  is the ratio of the number of scientific books to the number of engineering books in 2001 and  $r$  the same ratio in 2002, what is  $k$  if it is given by  $k = r/R$ ?
- (a) 2.8
  - (b) 1.25
  - (c) 0.2
  - (d) 1



29. Suppose the rate of profit is 20%, profit income is taxed at the rate of 30% and the rate of inflation is 5%. The real post-tax profit rate is
- (a) 9%
  - (b) 10.5%
  - (c) -15%
  - (d) None of the above
30. Bread and apple are substitute goods. A sudden rise in the supply of flour for making bread will result in
- (a) fall in the price of bread; and rise in the price of apple
  - (b) fall in the price of bread; and fall in the price of apple
  - (c) fall in the price of bread; and no change in the price of apple
  - (d) None of the above
31. The utility function of a consumer is  $u = 3(x_1 + x_2)$ , where  $u$ ,  $x_1$  and  $x_2$  denote utility, amount of good 1, and amount of good 2 respectively. Unit prices of good 1 and good 2 are Re 1 and Rs 3 respectively. Consumer's income is Rs 300. The consumer attains equilibrium at
- (a)  $x_1 = 150$ ;  $x_2 = 50$
  - (b)  $x_1 = 50$ ;  $x_2 = 150$
  - (c)  $x_1 = 0$ ;  $x_2 = 100$
  - (d)  $x_1 = 300$ ;  $x_2 = 0$
32. The production function of a firm is given by  $Q = X^{\frac{1}{3}}Y$ , where  $Q$ ,  $X$  and  $Y$  denote quantities of output, input 1 and input 2 respectively. The production function exhibits
- (a) constant returns to scale
  - (b) increasing returns to scale
  - (c) decreasing returns to scale
  - (d) None of the above

Question Nos. 33-36 are to be answered based on your understanding of the following passage from *Economic Development and the Price Level* by Geoffrey Maynard :

"Unless an appropriate relationship exists between the growth rates of agriculture and industry, the terms of exchange between them must alter. Since agricultural prices typically tend to respond much more rapidly than do the prices of industrial products to changes in the balance between supply and demand, their behaviour determines in large part the behaviour of the general price level. Thus in a situation where agricultural growth is tending to lag to an inappropriate extent behind both the growth of industrial output and the growth of real

income, excess demand pressure tend to appear in the agricultural product market. Whether excess demand or excess supply pressures exist in the industrial market depends on the balance between investment and saving; but, in either case, if agricultural prices are more flexible than industrial prices, then the required improvement in the terms of exchange of agriculture tends to be brought about by an absolute rise in agricultural prices, rather than by a fall in industrial prices. This is not just an immediate or short-run effect, for the rise in agricultural prices tends to generate consequential pressures on costs of production in industry, partly through a direct effect on raw material costs in industry, and partly, perhaps, through an induced effect on industrial money wages. Industrial prices may therefore be prevented from falling, even in a market where there tends to be excess supply; and indeed, if the cost pressures are substantial enough, they may even begin to rise. In this way, the improvement in agriculture's terms of exchange produces a rise in the general price level. Such a development is more likely to take place as the result of a spontaneous slowing down in the rate at which agricultural output is growing, relatively to other outputs; but it may also occur if the improvement in agriculture's terms of exchange is being produced by an acceleration in the rate of growth of industry. For opposite reasons, an acceleration in the rate of growth of agricultural output can produce a fall in the general price level."

33. According to the author, agricultural prices largely determine the behaviour of the general price level, because
- (a) agricultural growth tends to lag behind industrial growth
  - (b) agricultural prices respond to changes in demand-supply balances faster than industrial prices
  - (c) an appropriate relationship exists between agriculture and industry
  - (d) excess demand pressures always appear in this sector
34. Excess demand in the industrial market depends upon
- (a) the excess demand in agriculture
  - (b) whether agricultural prices are more flexible than industrial prices
  - (c) whether cost pressures are substantial enough
  - (d) the balance between saving and investment
35. The rise in agricultural prices
- (a) has only a short-run effect on industrial prices
  - (b) increases industrial costs of production
  - (c) creates excess supply in industry
  - (d) generates a spontaneous slowing down of agricultural output

- 36.** An improvement in agriculture's terms of trade with industry
- (a) can occur when there is a balance between investment and saving
  - (b) occurs when industrial prices are prevented from falling
  - (c) can produce a rise in the general price level
  - (d) is the result of substantial cost pressures in industry
- 37.** In terms of current annual human caused greenhouse gas emissions
- (a) the US is responsible for both the highest per capita and total emissions
  - (b) China is responsible for the highest total (but not per capita) emissions
  - (c) China is responsible for highest per capita and total emissions
  - (d) the US is responsible for the highest total (but not per capita) emissions
- 38.** Utensils worth Rs 1,500 are produced with steel costing Rs 750 and other materials costing Rs 150. Labour cost of producing these utensils is Rs 150 and depreciation of machinery is 0. The value added in producing these utensils is
- (a) Rs 450
  - (b) Rs 600
  - (c) Rs 750
  - (d) None of the above
- 39.** During the last two decades of the 20th century, India's labour force has grown at the rate of
- (a) 1.5% per annum
  - (b) 2.5% per annum
  - (c) 3.5% per annum
  - (d) 4.5% per annum

40. The famous book titled, *Poverty and Un-British Rule in India* was authored by
- (a) W. C. Bonnerjea
  - (b) Dadabhai Naoroji
  - (c) R. C. Dutt
  - (d) Lala Lajpat Rai
41. An outward shift of the production possibility frontier may be caused by
- (a) an increase in demand
  - (b) more government spending
  - (c) better training of employees
  - (d) production inefficiency
42. Let  $P(n, m)$  be a property about two integers  $n$  and  $m$ . If we want to disprove the claim that 'for every integer  $n$ , there exists an integer  $m$  such that  $P(n, m)$  is true', then we need to prove that
- (a) there exist integers  $n, m$  such that  $P(n, m)$  is false
  - (b) there exists an integer  $m$  such that  $P(n, m)$  is false for all integers  $n$
  - (c) there exists an integer  $n$  such that  $P(n, m)$  is false for all integers  $m$
  - (d) for every integer  $n$ , there exists an integer  $m$  such that  $P(n, m)$  is false
43. Let  $X, Y, Z$  be statements. Suppose we know that ' $X$  is true implies  $Y$  is true', and ' $X$  is false implies  $Z$  is true'. If we know that  $Z$  is false, then we can conclude that
- (a) both  $X$  and  $Y$  are true
  - (b) both  $X$  and  $Y$  are false
  - (c)  $X$  is true and  $Y$  is false
  - (d)  $X$  is false and  $Y$  is true

44. Let  $X, Y, Z$  be statements. Suppose we know that  $X$  implies  $Y$ , and that  $Y$  implies  $Z$ . If we also know that  $Y$  is false, we can conclude that
- (a)  $X$  is true
  - (b)  $X$  is false
  - (c)  $Z$  is true
  - (d)  $Z$  is false
45. Suppose one wishes to prove that 'if some  $X$  are  $Y$ , then some  $Z$  are  $W$ '. To do this, it would suffice to show that
- (a) some  $X$  are  $Z$ , and some  $Y$  are  $W$
  - (b) some  $Z$  are  $X$ , and some  $W$  are  $Y$
  - (c) all  $X$  are  $Z$ , and all  $Y$  are  $W$
  - (d) all  $Z$  are  $X$ , and all  $W$  are  $Y$
46. The annual average rate of employment generation in India during the decade of 1990s, compared to 1980s, was approximately
- (a) thrice
  - (b) twice
  - (c) same
  - (d) half
47. If the marginal cost of producing 4th unit is greater than the marginal cost of producing 3rd unit, then it follows that
- (a) the average cost of producing 4 units must be greater than the average cost of producing 3 units
  - (b) the average cost of producing 4 units must be less than the average cost of producing 3 units
  - (c) the average cost of producing 4 units must be equal to the average cost of producing 3 units
  - (d) None of the above

48. If the absolute value of price elasticity of demand for good  $X$  is greater than one, then we must have
- (a) if price increases by 1%, then the quantity demanded will decrease by less than 1%
  - (b) if price decreases by 1%, then the quantity demanded will increase by less than 1%
  - (c) if price of  $X$  increases, then the expenditure on the good will increase
  - (d) None of the above
49. Consider the following :
- Option I : You receive Rs 112 after one year.  
Option II : You receive Rs 55 after nine months and Rs 56 after one year.  
Given that the market rate of interest is 12% per annum, it follows that
- (a) Option I is better than Option II
  - (b) Option II is better than Option I
  - (c) Option I and Option II are equally good
  - (d) No conclusion can be drawn on the basis of the given information
50. Suppose Rs 1,00,000 is deposited in an account for 3 years at 11% per annum, compounded annually. How much money would be there at the end of 3 years?
- (a) Rs 1,33,000
  - (b) Rs 1,34,331.1
  - (c) Rs 1,36,763.1
  - (d) None of the above
51. Suppose the price elasticity of demand for good  $X$  is 0.2. If the price of  $X$  rises by 2.8%, what effect will it have on the total expenditure on good  $X$ ?
- (a) Expenditure on  $X$  will fall by 5.6%
  - (b) Expenditure on  $X$  will rise by 5.6%
  - (c) Expenditure on  $X$  will rise by 2.2%
  - (d) Expenditure on  $X$  will fall by 2.2%

52. A box contains red and green balls. The number of green balls is  $\frac{1}{3}$  the number of red balls. If a ball is taken randomly from the box, what is the probability that the ball is red?

- (a)  $\frac{2}{3}$
- (b)  $\frac{1}{3}$
- (c)  $\frac{3}{4}$
- (d) None of the above

53. The probability distribution of a random variable  $X$  is given in the table below :

$X$	Probability
0	0.24
1	0.38
2	0.20
3	0.13
4	0.05

The mean and variance of  $X$  are respectively

- (a) 2; 2
- (b) 2; 1.4142
- (c) 1.37; 1.2731
- (d) None of the above

54. In a certain country telephone numbers have 8 digits. The first two digits are the area code and are the same within a given area. The last 6 digits are the local number and cannot begin with 0. How many different telephone numbers are possible within a given area code in this country?

- (a)  $10^6$
- (b)  $9^6$
- (c) 900000
- (d) None of the above

55. Two dice are rolled. We define events E1, E2, E3 and E4 as follows :

E1 : Getting a sum equal to 10

E2 : Getting a double

E3 : Getting a sum less than 4

E4 : Getting a sum less than 7

Determine which statement is true

- (a) Events E1 and E2 are mutually exclusive
- (b) Events E3 and E4 are mutually exclusive
- (c) Events E2 and E3 are mutually exclusive
- (d) Events E1 and E4 are mutually exclusive

56. Limit of  $\frac{e^x - 1}{x}$  as  $x$  approaches 0 is equal to

- (a) 0
- (b) 1
- (c)  $\infty$
- (d) None of the above

57. If  $f(x)$  and  $g(x)$  are differentiable functions such that  $f'(x) = 3x$  and  $g'(x) = 2x^2$ , then the limit  $\frac{\{f'(x) + g'(x)\} - \{f'(1) + g'(1)\}}{(x - 1)}$  as  $x$  approaches 1 is equal to

- (a) 5
- (b) 0
- (c) 20
- (d) None of the above

58. Functions  $g$  and  $h$  are given by  $g(x) = \sqrt{x-1}$  and  $h(x) = x^2 + 1$ . The composite function  $(g \circ h)(x)$  is given by

- (a)  $x$
- (b)  $|x|$
- (c)  $\sqrt{x}$
- (d) None of the above



59. Equation  $x^2 + \frac{1}{2}mx + 1 = 0$  has two distinct real solutions, if
- (a)  $m = 3$
  - (b)  $m = 4$
  - (c)  $m = 5$
  - (d) None of the above
60. Income distribution of most countries follows
- (a) linear pattern
  - (b) normal distribution
  - (c) sinusoidal curve
  - (d) log-normal distribution
61. If  $m > n$ , which of the following is necessarily true?
- (a)  $m^2 > n^2$
  - (b)  $mn > 0$
  - (c)  $mn > -mn$
  - (d) None of the above
62. If  $x$  and  $y$  are any real numbers such that  $0 < x < 2 < y$ , which of the following is necessarily true?
- (a)  $x < xy/2 < y$
  - (b)  $0 < xy < 2x$
  - (c)  $x < xy < 2$
  - (d)  $xy < y$
63. A number of the form  $213xy$ , where  $x$  and  $y$  are digits, has a remainder less than 10 when divided by 100. The sum of all the digits in the above number is equal to 13. The digit  $y$  is
- (a) 5
  - (b) 7
  - (c) 6
  - (d) 8

64. The graphs of the two equations  $y = dx^2 + bx + c$  and  $y = Ax^2 + Bx + C$ , such that  $a$  and  $A$  have different signs and that the quantities  $b^2 - 4ac$  and  $B^2 - 4AC$  are both negative,
- (a) intersect at two points
  - (b) intersect at one point
  - (c) do not intersect
  - (d) None of the above
65. Three solutions of the equation  $f(x) = 0$  are  $-2, 0$  and  $3$ . Therefore, the three solutions of the equation  $f(x-2) = 0$  are
- (a)  $-4, -2$  and  $1$
  - (b)  $-2, 0$  and  $3$
  - (c)  $4, 2$  and  $5$
  - (d)  $0, 2$  and  $5$
66. If  $1.56^x = 2$ , then  $x =$
- (a)  $\log 1.56 / \log 2$
  - (b)  $\log 2 / \log 1.56$
  - (c)  $2 / \log 1.56$
  - (d)  $\log 2 / 1.56$
67. If  $\log_{10}(x-y) = 3$  and  $\log_{10}(x+y) = 4$ , then  $x =$
- (a)  $3 \cdot 5$
  - (b)  $11000$
  - (c)  $5500$
  - (d)  $103 \cdot 5$
68. The real solution(s) to the equation  $|x-1| = 2x+1$  is/are
- (a)  $-2$
  - (b)  $-2, 0$
  - (c)  $-1$
  - (d)  $0$

69. Four dice are thrown. What is the probability that the same number appears on each of them?
- (a)  $\frac{1}{36}$
  - (b)  $\frac{1}{18}$
  - (c)  $\frac{1}{216}$
  - (d) None of the above
70. If  $f(x) = -e^x - 2$ , then the range of  $f$  is given by the interval
- (a)  $(-\infty, -2)$
  - (b)  $(-\infty, +\infty)$
  - (c)  $(-2, +\infty)$
  - (d)  $(-\infty, +2)$
71. The mean of a data set is equal to 10 and its standard deviation is equal to 1. If we add 5 to each data value, then the mean and standard deviation become
- (a) mean = 15, standard deviation = 6
  - (b) mean = 10, standard deviation = 6
  - (c) mean = 15, standard deviation = 1
  - (d) mean = 10, standard deviation = 1
72. The sum  $\sum_{k=1}^{100} (3+k) =$
- (a) 5053
  - (b) 5050
  - (c) 300
  - (d) 5350
73. How many 4-digit numbers can be formed, if no digit is used more than once?
- (a) 5040
  - (b) 3024
  - (c) 4536
  - (d) None of the above

74. How many of the 4-digit numbers can be formed, if no digit is used more than once, which are divisible by 5?

- (a) 1008
- (b) 952
- (c) 896
- (d) None of the above

Question Nos. 75-78 are to be answered on the basis of the following :

The following table shows the marginal cost of producing  $n$ th ( $n = 1, 2, \dots, 10$ ) unit of output by a competitive firm :

Output	Marginal Cost
1	1.0
2	1.3
3	1.7
4	2.3
5	3.0
6	3.9
7	5.0
8	6.5
9	8.2
10	10.0

It is also given that the total cost of producing 3 units of output is 7.

75. The total cost of producing 5 units of output (correct up to two decimal places) is

- (a) 15.00
- (b) 9.30
- (c) 12.30
- (d) None of the above

76. The average variable cost of producing 7 units of output (correct up to two decimal places) is

- (a) 2.60
- (b) 0.71
- (c) 3.03
- (d) None of the above

77. The average cost of producing 9 units of output (correct up to two decimal places) is
- (a) 3.66
  - (b) 3.99
  - (c) 0.91
  - (d) None of the above
78. The profit-maximizing number of units of output for the firm, if the market price of the good is 6, is
- (a) 4
  - (b) 7
  - (c) 10
  - (d) None of the above
79. Suppose there are 3 alternatives  $x$ ,  $y$  and  $z$ ; and four individuals 1, 2, 3 and 4. The individuals' rankings (orderings) of the three alternatives,  $R_i$ ,  $i = 1, \dots, 4$  are given by
- $R_1 : (xy)z$
  - $R_2 : yzx$
  - $R_3 : z(xy)$
  - $R_4 : (xy)z$
- (Notation : Alternatives inside the parentheses are indifferent to each other. If an alternative is written to the left of another alternative, then the former is preferred to the latter.)
- Then the set of Pareto-optimal alternatives is
- (a)  $\{x \cdot y\}$
  - (b)  $\{x \cdot z\}$
  - (c)  $\{y \cdot z\}$
  - (d) None of the above
80. With a positive externality
- (a) there is underconsumption in the free market
  - (b) there is overconsumption in the free market
  - (c) the government may tax to decrease production
  - (d) society could be made better-off if less was produced

81. A circle of area  $A$  passes through the points  $(8, 0)$  and  $(0, 6)$ . Then we must have
- (a)  $A < 25\pi$
  - (b)  $A \geq 25\pi$
  - (c)  $A = 100\pi$
  - (d) None of the above
82. For what value(s) of the parameter  $m$  does the equation  $-2x^2 + mx = 2$  have one solution only?
- (a) 0
  - (b)  $-2, 2$
  - (c)  $-1, 1$
  - (d)  $-4, 4$
83. The Cash Reserve Ratio refers to
- (a) the liquid cash that banks have to maintain with the Reserve Bank of India as a certain percentage of their demand and time deposits
  - (b) the cash that banks have to keep in their vaults in order to meet sudden demand from depositors in times of crisis
  - (c) the cash that households have to keep in reserve to meet sudden increases in the price of essential goods and services
  - (d) the cash that the government keeps in reserve so as to be ready to meet unexpected contingencies
84. The probability that Mr. A will be booked for illegal parking in the central market is  $\frac{1}{3}$ . During the last nine days, Mr. A has illegally parked everyday but has not been booked. Today, on the 10th day, he again decides to park illegally. The probability that he will be booked today is
- (a) greater than  $\frac{1}{3}$
  - (b) less than  $\frac{1}{3}$
  - (c) equal to  $\frac{1}{3}$
  - (d) There is not enough information to make the required inference

- 85.** The primary deficit refers to
- (a) the deficit in the primary sector of the economy
  - (b) the deficit in the revenue account of the budget
  - (c) the deficit in the capital account of the budget
  - (d) the fiscal deficit less the interest outgo in the budget
- 86.** The money multiplier in an economy increases with
- (a) increase in Cash Reserve Ratio
  - (b) increase in Statutory Liquidity Ratio
  - (c) increase in banking habit of the population
  - (d) increase in the population of the country

Question Nos. **87** and **88** are to be answered on the basis of the following information :  
The market for a good consists of 100 buyers and 50 sellers. Each seller has the same supply function, which is given by

$$\begin{aligned} \text{Supply} &= 0 \text{ if price} \leq 10 \\ &= p - 10 \text{ if price} > 10 \end{aligned}$$

Each buyer has the same demand function, which is given by

$$\begin{aligned} \text{Demand} &= 0 \text{ if price} \geq 20 \\ &= 20 - p \text{ if price} < 20 \end{aligned}$$

- 87.** Market demand function is given by
- (a) Market demand =  $2000 - 100p$
  - (b) Market demand =  $2000 - 100p$ , if  $p < 20$ ; and Market demand = 0, if  $p \geq 20$
  - (c) Market demand =  $2000 - 100p$ , if  $p < 2000$ ; and Market demand = 0, if  $p \geq 2000$
  - (d) None of the above

88. Let the market equilibrium price be denoted by  $p^*$ . Then

- (a)  $10 < p^* < 11$
- (b)  $14 < p^* < 15$
- (c)  $16 < p^* < 17$
- (d) None of the above

89. Let  $A$  be the set  $\{f(x) \mid 0 < x < 1\}$ . What does it mean if we say that  $y$  is not an element of  $A$ ?

- (a)  $f(y)$  is not an element of  $A$
- (b)  $f(y)$  is not between 0 and 1
- (c)  $y$  is not between  $f(0)$  and  $f(1)$
- (d) None of the above

90. Which of the following statements is false?

- (a) The numbers 4, 5, 6, 7 have the same standard deviation as the numbers 1231, 1232, 1233, 1234
- (b) The numbers 1, 5, 7, 9 have a smaller standard deviation than the numbers 1231, 1235, 1237, 1239
- (c) The numbers 1, 5, 6, 10 have a larger standard deviation than the numbers 1231, 1232, 1233, 1234
- (d) The numbers 1, 2, 9, 10 have the same standard deviation as the numbers 1231, 1232, 1239, 1240



Question Nos. 91 and 92 are to be answered on the basis of the following information :

One of A, B, C and D has cheated in the examination with the help of another one of them. Here are the statements that these individuals made to the investigator.

A : If B is guilty of some wrong-doing, then C must be innocent.

B : If A is innocent, then C must be guilty.

C : If B cheated in the examination, then D must have had nothing to do with any wrong-doing.

D : I am innocent.

The statements of the person who has cheated and his accomplice are false and those of the remaining two are true.

91. The person who cheated in the examination was

- (a) A (b) B  
(c) C (d) D

92. The accomplice of the person who cheated in the examination was

- (a) A (b) B  
(c) C (d) D

93. There are four candidates for an award—A, B, C and D

Only one of the four candidates had cleared both Tests I and II.

Only one candidate had cleared both Tests I and III.

Only one candidate had cleared both Tests I and IV.

Only one candidate had cleared both Tests II and III.

Only one candidate had cleared both Tests II and IV.

Only one candidate had cleared both Tests III and IV.

Both A and B had cleared Test I.

Both C and D had cleared Test II.

Both B and C had cleared Test III.

D had cleared Test IV.

The award went to the candidate who had cleared more tests than any other candidate.

The award was given to

- (a) A (b) B  
(c) C (d) D

94. A firm has a production function  $q = 4x^{\frac{1}{2}}$ , where  $q$  and  $x$  denote the quantities of output and input respectively. If the price of the output is Rs 90 per unit and the price of the input is Rs 20 per unit, the firm can earn a maximum profit of
- (a) Rs 1,620
  - (b) Rs 3,600
  - (c) Rs 808
  - (d) None of the above
95. The short-run supply curve of a competitive firm is given by
- (a) the marginal cost curve of the firm
  - (b) the marginal cost curve above the average cost curve
  - (c) the marginal cost curve above the average variable cost curve
  - (d) the upward sloping part of the marginal cost curve
96. In situation I : Price of good X is twice the price of good Y; and the consumer spends his entire income on buying 6 units of good X and 20 units of good Y. In situation II : Consumer's income is double of his income in situation I, price of good Y is twice the price of good Y in situation I, and the price of good X is the same as in situation I. The consumer wants to continue consuming 20 units of good Y in situation II. The maximum number of units of good X that he can purchase in situation II is
- (a) 12
  - (b) 14
  - (c) 16
  - (d) 6
97. Let units of good 1 be measured on the horizontal axis and units of good 2 on the vertical axis. Let price of good 1 be  $p$  and price of good 2 be  $q$ . The slope of the budget line is then given by
- (a)  $p/q$
  - (b)  $-p/q$
  - (c)  $q/p$
  - (d)  $-q/p$

Question Nos. 98-100 are to be answered on the basis of the following information :

Five teachers R, S, T, U, V teach five different subjects- Mathematics, History, Sociology, Economics, Literature. Each teacher teaches once a week on a fixed weekday (Monday through Friday); and each one teaches on a different day from others.

V does not teach Economics; and does not teach on Tuesdays.

S teaches History; and does not teach on a Monday or a Friday.

The Mathematics teacher teaches on Thursdays.

T does not teach Economics; and teaches on Wednesdays.

The Literature teacher, who is not U, teaches on Fridays.

R teaches on Mondays.

98. On which day does S teach?

- (a) Tuesday
- (b) Thursday
- (c) Friday
- (d) None of the above

99. Which subject does T teach?

- (a) Economics
- (b) Sociology
- (c) Mathematics
- (d) Literature

100. On which day is Economics taught?

- (a) Monday
- (b) Tuesday
- (c) Wednesday
- (d) None of the above

**30**

QUESTION PAPER  
SERIES CODE

**A**

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**ENTRANCE EXAMINATION, 2010**

**M.A. ECONOMICS**

**[ Field of Study Code : ECOM (216) ]**

*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 the 100 questions in the Answer Sheet provided for the purpose by darkening the correct choice, i.e., (a) or (b) or (c) or (d) or (e) with a BALLPOINT PEN only against the corresponding circle. Any overwriting or alteration will be treated as wrong answer.
- (v) Each correct answer carries 1 mark. There will be negative marking and 1/2 mark will be deducted for each wrong answer.
- (vi) Answer written by the candidates inside the Question Paper will not be evaluated.
- (vii) Pages at the end have been provided for Rough Work.
- (viii) 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
<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d	<input checked="" type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d	<input checked="" type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input checked="" type="radio"/> d	<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d	<input checked="" type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> d

4. Once marked, no change in the answer is allowed.
5. Please do not make any stray marks on the Answer Sheet.
6. Do rough work only on the pages provided for this purpose.
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. In a closed economy, the balanced budget multiplier is
  - (a) equal to 1
  - (b) less than 1
  - (c) more than 1
  - (d) dependent on the marginal propensity to consume in the economy
  
2. Stagflation describes a situation of
  - (a) rising prices and rising output
  - (b) rising prices and falling or stagnant output
  - (c) falling or stagnant prices and rising output
  - (d) falling or stagnant prices and falling or stagnant output
  
3. If Canada has a comparative advantage in the production of wheat compared to the United States, it means that
  - (a) the opportunity cost of producing wheat is higher in Canada than in the US
  - (b) the opportunity cost of producing wheat is lower in Canada than in the US
  - (c) with free trade, Canada will export all of its wheat
  - (d) with free trade, the US will not produce any wheat
  
4. Infant industry protection is
  - (a) the policy of ensuring that children are not adversely affected by industrial pollution
  - (b) the policy of protecting a new domestic industry from lower cost imports
  - (c) the policy of providing bank credit to industries run by weaker off sections
  - (d) the policy of subsidizing imports in newly industrializing countries

5. For the countries in the European Union that share a common currency, the euro,
- (a) it is impossible to have different real exchange rates from one another
  - (b) it is possible to have real exchange rates that are different from one another
  - (c) the nominal and real exchange rates will always vary according to fiscal policy
  - (d) the nominal and real exchange rates will always vary according to capital flows
6. The current account balance in an open economy
- (a) always includes the balance on investment income
  - (b) never includes the balance on investment income
  - (c) includes the balance on investment income and flows of investment
  - (d) includes flows of investment but not the balance on investment income
7. A streetlight is considered as a good example of a public good
- (a) because it is provided in public spaces
  - (b) because its consumption is non-rival and non-excludable
  - (c) because its consumption is rival but non-excludable
  - (d) because its consumption is non-rival but excludable
8. The bottom 20 percent of the world's population are estimated to receive around this much of global income
- (a) less than 1 percent
  - (b) around 5 percent
  - (c) around 10 percent
  - (d) around 15 percent
9. If an economy is a price taker in world markets for both exports and imports, exchange rate devaluation
- (a) will have no effect on the balance of trade
  - (b) will cause the balance of trade to improve
  - (c) will cause the balance of trade to deteriorate
  - (d) will turn a trade deficit into a balance

10. The 'Gold Standard' refers to an international currency regime under which
- (a) only gold was used in international transactions
  - (b) only gold was used as money in domestic transactions
  - (c) countries officially linked their money supply to a specific value of gold
  - (d) countries officially linked the value of their money to a specific weight of gold

The next six questions 11–16 are based on the following table which gives the variable cost of producing the different levels of output of a commodity that a competitive firm might produce :

Output	Variable Cost of Production
0	0
1	25
2	42
3	54
4	64
5	75
6	93
7	112
8	140
9	180
10	230

The sunk cost of production in the short run is 15.

11. If the price of the commodity is 20, then the profit-maximizing level of output is
- (a) 6
  - (b) 7
  - (c) 8
  - (d) 9

12. If the price of the commodity is 19, then the profit-maximizing level of output is
- (a) 6
  - (b) 7
  - (c) 8
  - (d) 9
13. Let  $\pi(20)$  denote the profit of the firm when the price of the output is 20 and let  $\pi(19)$  denote the profit of the firm when the price of the output is 19. Which of the following is correct?
- (a)  $\pi(20) = \pi(19) = 6$
  - (b)  $\pi(20) < \pi(19)$
  - (c)  $\pi(20) > \pi(19)$
  - (d)  $\pi(20) = \pi(19) = 23$
14. If the price of the commodity is 14, then the profit-maximizing level of output is
- (a) 4
  - (b) 5
  - (c) 0
  - (d) None of the above
15. If the price of the commodity is 17, then the profit-maximizing level of output is
- (a) 1
  - (b) 2
  - (c) 3
  - (d) 5



16. If the price of the commodity is 17, then at the profit-maximizing level of output the firm
- (a) incurs a loss of 5
  - (b) incurs a loss of 15
  - (c) makes a profit of 7
  - (d) None of the above

17. If good  $x$  and good  $y$  are perfect substitutes, then the indifference curves will be
- (a) strictly convex to the origin
  - (b) strictly concave to the origin
  - (c) straight lines
  - (d) L-shaped

18. A monopolist faces the following demand function  $D(P)$  :

$$\begin{aligned} D(P) &= 10 \text{ for } P \text{ in the interval } [0, 10] \\ &= 20 - P \text{ for } P \text{ in the interval } (10, 20) \\ &= 0 \text{ for } P \text{ in the interval } [20, \infty) \end{aligned}$$

Now suppose that the monopolist has zero-variable cost of production. However, if it produces any positive amount, it must incur a fixed cost of Rs 50. What is the optimal monopoly price?

- (a) 15
- (b) 10
- (c) 5
- (d) There is no monopoly equilibrium

The next two questions 19 and 20 are based on the following :

Suppose a consumer wants to consume two commodities both of which are available only in discrete units. Let the prices of the goods be Rs 4 and Rs 3 respectively. The consumer's income is Rs 10.

19. The consumer's budget set is
- (a)  $\{(x_1, x_2) | 4x_1 + 3x_2 \leq 10 \text{ and } x_1, x_2 \geq 0\}$
  - (b)  $\{(0, 0), (0, 1), (0, 2), (0, 3), (1, 0), (1, 1), (1, 2), (2, 0)\}$
  - (c)  $\{(0, 1), (0, 2), (0, 3), (1, 0), (1, 1), (1, 2), (2, 0)\}$
  - (d)  $\{(1, 2)\}$

20. Suppose the price of both commodities fall by 10 paise and money income increases by 10 paise. If the preference of the consumer over the two goods have not changed, then
- (a) at the optimum, the consumer would consume more of both commodities
  - (b) at the optimum, the consumer would consume more of commodity 1 and less of commodity 2
  - (c) at the optimum, the consumer would consume less of commodity 1 and more of commodity 2
  - (d) the consumer's optimal bundle does not change
21. Satish is very conscious about the food he eats. He only eats *rotis* and *dal*; a cup of *dal* costs Rs 2 while each *roti* costs Re 1 and Satish decides to spend only Rs 13 per day on food. Also he decides to consume exactly 5500 calories a day; he has been told that each *roti* has 1000 calories while each cup of *dal* has 500 calories. He spends his entire money allocated on foods. Then
- (a) he consumes 3 *rotis* and 5 cups of *dal* per day
  - (b) he consumes no more than 3 *rotis* per day
  - (c) he consumes no more than 5 cups of *dal* per day
  - (d) he consumes 5 *rotis* and 4 cups of *dal* per day
22. A monopolist has a demand curve with constant price elasticity with absolute value 4. The monopolist charges a price of 60 per unit of output. What is its marginal cost at this level of output?
- (a) 23.5
  - (b) 136
  - (c) 45
  - (d) 54
23. In a two-good world, a consumer's utility function is given by the following :  
 $U(x, y) = \max \{x, y\}$ , where  $x$  and  $y$  are the amounts consumed of the first and second good respectively. The price of both goods are Rs 2 per unit. The consumer's income is Rs 100. His optimal consumption bundle is
- (a) either (i) zero unit of  $x$  and 50 units of  $y$  or (ii) 50 units of  $x$  and zero unit of  $y$
  - (b) 50 units of  $x$  and 50 units of  $y$
  - (c) 25 units of  $x$  and 25 units of  $y$
  - (d) None of the above

24. A firm has a production function  $q = A \cdot K^{0.5}L^{1.8}$ , where  $A$  is a positive constant. Such a production function exhibits
- (a) decreasing returns to scale and diminishing marginal product for factor  $K$
  - (b) increasing returns to scale and diminishing marginal product for factor  $K$
  - (c) decreasing returns to scale and increasing marginal product for factor  $K$
  - (d) constant returns to scale with increasing marginal product for factor  $L$
25. The short-run supply curve for a competitive firm is given by
- (a) the marginal cost curve of the firm
  - (b) the marginal cost curve above the average cost curve
  - (c) the marginal cost curve above the average variable cost curve
  - (d) the upward sloping part of the marginal cost curve
26. If  $X_1, X_2, \dots, X_n$  are non-negative real numbers, then their
- (a) Arithmetic Mean  $\leq$  Geometric Mean
  - (b) Geometric Mean  $\leq$  Arithmetic Mean
  - (c) Arithmetic Mean  $= 0.5$  (Geometric Mean)
  - (d) There is no fixed relationship between Arithmetic Mean and Geometric Mean
27. If  $(x/b) > (b/d)$ , then
- (a)  $xc > b^2$
  - (b)  $xc < b^2$
  - (c)  $xc = b^2$
  - (d) Cannot say anything about relation between  $x$ ,  $b$  and  $c$
28. Let  $f(x) = (\log(x))/x$ , where  $0 < x < 1$ . Then for all  $x$  such that  $0 < x < 1$
- (a)  $f'(x) < 0$
  - (b)  $f'(x) > 0$
  - (c)  $f'(x) > 0$ , if  $0 < x < 0.75$  and  $f'(x) < 0$ , if  $0.75 \leq x < 1$
  - (d)  $f'(x) > 0$ , if  $0 < x < 0.5$  and  $f'(x) < 0$ , if  $0.5 \leq x < 1$

29. Given two numbers  $x = (3\sqrt{7} + 4\sqrt{7})^2$  and  $y = 343$ , which of the following must be true?
- (a)  $x > y$
  - (b)  $y > x$
  - (c)  $x = y$
  - (d)  $x = y/2$
30. Beena's average score after 8 class tests is 84. In her first 7 class tests, Beena's average score was 85. In her last class test, Beena has scored
- (a) 82
  - (b) 87
  - (c) 77
  - (d) None of the above
31. The function  $f(x) = \log_{10} x$  is continuous over the interval
- (a)  $(-a, a)$ , where  $a > 0$
  - (b)  $(-\infty, +\infty)$
  - (c)  $[-a, a]$ , where  $a > 0$
  - (d)  $(0, 1)$
32. If  $a \cdot b = M$ ,  $M$  is different from 0 and  $(a + b) = 4$ , then
- (a) there are always real values for  $a, b$
  - (b) whenever  $4 \geq M > 0$  there are real values for  $a, b$
  - (c) whenever  $0 > M$  there are positive values for both  $a, b$
  - (d) whenever  $0 > M$  there are negative values for both  $a, b$
33. Let  $X_1, X_2, \dots, X_{20}$  and  $Y_1, Y_2, \dots, Y_n$  be two collections of sets. Suppose every  $X_i$  contains 5 elements and every  $Y_j$  contains 2 elements and  $\bigcup_{i=1}^{20} X_i = S = \bigcup_{j=1}^n Y_j$ . If each element of  $S$  belongs to exactly 10 of the  $X_i$ 's and to exactly 4 of the  $Y_j$ 's, then  $n$  is
- (a) 10
  - (b) 20
  - (c) 100
  - (d) 50

34. Suppose interest is compounded half-yearly at the rate of 10% per annum. If the present value of an asset which returns a fixed sum of Rs  $X$  after one year and nothing thereafter is Rs 50,000, then  $X$  is equal to

- (a) Rs 54,875
- (b) Rs 55,000
- (c) Rs 55,125
- (d) Rs 55,250

35. If the elasticity of  $f(x)$  with respect to  $x$  is  $0.5$  ( $f(x) > 0$  and  $x > 0$ ), then the elasticity of  $f(x)/x$  with respect to  $x$  is

- (a)  $-0.5$
- (b)  $0$
- (c)  $0.5$
- (d)  $1$

36. In an examination, there are three multiple-choice questions and each question has 4 choices. Number of ways in which a student can fail to get all answers correct is

- (a) 12
- (b) 27
- (c) 63
- (d) 72

37. A function is selected at random from all the functions of the set  $A = \{1, 2, 3, \dots, n\}$  in to itself. The probability that the function selected is one-to-one is

- (a)  $\frac{1}{n^n}$
- (b)  $\frac{2}{(n-1)!}$
- (c)  $\frac{1}{n!}$
- (d)  $\frac{(n-1)!}{n^{n-1}}$

38. A fair die has given the number 6 on five consecutive throws. What is the probability that the next throw will also give the number 6?
- (a)  $1/30$
  - (b)  $1/6$
  - (c)  $5/6$
  - (d) None of the above
39. The number  $0.999999\dots$  is
- (a) exactly equal to 1
  - (b) slightly less than 1
  - (c) slightly more than 1
  - (d) between 0.99 and 0.999
40. Let  $S = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots$   
Then
- (a)  $S$  is equal to 4
  - (b)  $S$  is equal to 6
  - (c)  $S$  is equal to  $8.5$
  - (d) the sum  $S$  does not converge to any finite value
41. Which of the following is a function?
- (a) A rule that assigns the circumference of a rectangle to its area
  - (b) A rule that assigns to each number its square root
  - (c) A rule that assigns to each person in a classroom his or her height
  - (d) A rule that assigns the salary of a person to his or her years of education

The next four questions 42–45 are based on the following :

Consider a country in which there are four different types of people Red, Blue, Green and Yellow. All Reds earn the same income. The same is true about the Blues, Greens and Yellows. However the Red income, the Blue income, the Green income and Yellow income can be different from each other. A distribution of income of the country ( $D_i$ ) specifies the Red income, Blue income, Green income and Yellow income and also the number of Reds, Blues, Greens and Yellows. The following table gives the possible income distributions for the country :

	Income				Number of Individuals			
	Red	Blue	Green	Yellow	Red	Blue	Green	Yellow
$D_1$	1	2	3	4	1	1	1	1
$D_2$	3	4	1	2	1	1	1	1
$D_3$	5	10	15	20	1	1	1	1
$D_4$	0.8	1.6	2.4	5.2	1	1	1	1
$D_5$	2.5	2.5	2.5	2.5	1	1	1	1
$D_6$	1	2	3	4	5	5	5	5

42. Let  $G_i$  denote the Gini coefficient for the income distribution  $i$ . Which of the following is true?

- (a)  $G_5 < G_1 = G_2 = G_3 = G_6 = G_4$
- (b)  $G_5 < G_1 = G_2 = G_3 = G_6 < G_4$
- (c)  $G_1 > G_2 > G_3 > G_4 > G_5 > G_6$
- (d)  $G_1 < G_2 < G_3 < G_4 < G_5 < G_6$

43. Let  $\sigma_i$  denote the standard deviation for the income distribution  $i$ . Which of the following is true?

- (a)  $\sigma_5 < \sigma_1 = \sigma_2 = \sigma_6 < \sigma_4 < \sigma_3$
- (b)  $\sigma_5 < \sigma_1 = \sigma_2 = \sigma_6 < \sigma_3 < \sigma_4$
- (c)  $\sigma_5 < \sigma_1 = \sigma_2 < \sigma_6 < \sigma_4 < \sigma_3$
- (d)  $\sigma_5 < \sigma_1 = \sigma_6 < \sigma_2 < \sigma_4 < \sigma_3$

44. Let  $\mu_i$  denote the median for the income distribution  $i$ . Which of the following is true?
- (a)  $\mu_4 < \mu_1 = \mu_2 = \mu_5 < \mu_6 < \mu_3$
  - (b)  $\mu_4 < \mu_1 = \mu_2 = \mu_5 = \mu_6 < \mu_3$
  - (c) The mean is equal to the median for each of the given distributions
  - (d) The mean is different from the median for each of the given distributions
45. Consider the five income distributions  $D_1, D_2, D_3, D_4, D_5$ . Which of the following is true?
- (a) There is no Pareto-optimal distribution
  - (b) All distributions are Pareto-optimal
  - (c)  $D_3$  is the only Pareto-optimal distribution
  - (d)  $D_1$  and  $D_3$  are the only Pareto-optimal distributions

The next three questions 46–48 are based on the following :

Ms. A wishes to renovate her cottage. She hires the services of a plumber, a carpenter, a painter, an electrician and an interior decorator. The renovation is to be completed in a period of one working week, i.e., Monday to Friday. Every worker will be taking one complete day to do his job. Ms. A will allow just one person to work per day.

The painter can do his work only after the plumber and the carpenter have completed their jobs. The interior decorator has to complete his job before that of the electrician. The carpenter cannot work on Monday or Tuesday.

46. In case the painter works on Thursday, which among the following alternatives is possible?
- (a) The electrician works on Tuesday
  - (b) The electrician works on Friday
  - (c) The interior decorator does his work after the painter
  - (d) The plumber and the painter work on consecutive days
47. In case the painter works on Friday, which among the following statements must be untrue?
- (a) The carpenter may work on Wednesday
  - (b) The carpenter and the electrician may work on consecutive days
  - (c) In case the carpenter works on Thursday, the electrician has to work on the previous day, i.e., Wednesday
  - (d) The plumber may work before the electrician does



48. Which arrangement among the following is possible?
- (a) The painter will work on Wednesday and the plumber on Thursday
  - (b) The carpenter will work on Tuesday and the painter on Friday
  - (c) The painter will work on Monday and the carpenter on Thursday
  - (d) The carpenter will work on Wednesday and the plumber on Thursday
49. There are two egg delivery boys you can order eggs from. The probability of the first boy falling and breaking all the eggs is  $\frac{1}{2}$  and the probability of the second boy falling and breaking all the eggs is  $\frac{1}{5}$ . How would you distribute your order for eggs so as to minimize expected total loss of eggs?
- (a) Order all your eggs from the first boy
  - (b) Order all your eggs from the second boy
  - (c) Distribute the order for eggs between the two boys equally
  - (d) Order three-fourths of your eggs from the first boy and the rest from the second boy
50. If you integrate the function  $f(x) = 1/x$  from 1 to 3, you get
- (a) 2
  - (b)  $\log 3$
  - (c)  $\log 4$
  - (d) None of the above
51. If  $x < y + \epsilon$ , for all  $\epsilon > 0$ , then
- (a)  $x > y$
  - (b)  $x \leq y$
  - (c)  $x > 0 > y$
  - (d)  $x < 0 < y$
52. The rate of interest is
- (a) a flow variable
  - (b) a stock variable
  - (c) the ratio of a flow variable to a stock variable
  - (d) the ratio of a stock variable to a flow variable

53. The fiscal deficit is
- (a) a flow variable
  - (b) a stock variable
  - (c) the ratio of a flow variable to a stock variable
  - (d) the ratio of a stock variable to a flow variable
54. If in a given year a country's GDP at constant prices is 1000 currency units and the value of its implicit GDP deflator for that year is 110, the value of the country's GDP at current prices (in its currency units) is
- (a) 890
  - (b) 909.09
  - (c) 990.09
  - (d) 1100
55. Suppose the difference between the transactions velocity and the income velocity of circulation of money in an economy is 5 and the money value of total transactions is 6 times the money value of aggregate income. If the quantity of money in circulation is 1000 currency units, then the money value of aggregate income in currency units is
- (a) 1000
  - (b) 1200
  - (c) 1500
  - (d) 1800
56. Suppose an asset provides returns of Rs 315 after one year, Rs 661.50 after two years and Rs 1389.15 after three years and nothing thereafter. If interest is compounded yearly and the rate of interest is 5% per annum, what is the present discounted value of the asset?
- (a) Rs 2,050
  - (b) Rs 2,100
  - (c) Rs 2,200
  - (d) Rs 2,250

57. Suppose a plant can be used to produce in a day  $x$  units of product 1 and  $y$  units of product 2 where  $y = (32 - 5x)/(10 - x)$ , where  $32/5 \geq x \geq 0$ . If the unit price of product 1 is twice the unit price of product 2, then to maximize total revenue the number of units of  $x$  the plant should be used to produce in a day is

- (a) 4
- (b) 5
- (c) 6
- (d) 6.4

The next four questions 58-61 are based on the following :

Suppose, in equilibrium, aggregate income (in units of money per year) in an economy  $Y = C + I$ , where investment expenditure (in units of money per year)  $I = 1000$  and aggregate consumption expenditure (in units of money per year)  $C$  satisfies the following conditions :

- (i)  $C$  is a function of current disposable income in the economy  $(Y_d)$
- (ii) If  $Y_d = 0$ , then  $C = 500$
- (iii) Marginal propensity to save out of  $Y_d$  is constant in the economy and equal to 30%

Suppose the government collects direct tax revenues equal to 15% of  $Y$  and makes direct transfer payments equal to 750 units of money per year.

58. What is the value of the investment multiplier in the economy?

- (a) Between 1.9 and 2.1
- (b) Between 2.1 and 2.3
- (c) Between 2.3 and 2.5
- (d) More than 2.5

59. What is the equilibrium value of  $Y$  in the economy?

- (a) Between 3250 and 3750
- (b) Between 3750 and 4250
- (c) Between 4250 and 4750
- (d) Between 4750 and 5250

60. If instead of 750 units of money the government makes annual transfer payments equal to 10% of  $Y$ , then the value of the investment multiplier will
- (a) decrease by less than unity
  - (b) decrease by more than unity
  - (c) increase by less than unity
  - (d) increase by more than unity
61. If instead of 750 units of money the government makes annual transfer payments equal to 10% of  $Y$ , then the equilibrium value of  $Y$  will
- (a) decrease by less than 1000
  - (b) decrease by more than 1000
  - (c) increase by less than 1000
  - (d) increase by more than 1000

The next three questions 62-64 are based on the following information :

A student has taken 5 courses : Philosophy, Biology, Economics, Mathematics and Literature. He studies for these courses according to the following pattern :

Every week the student studies for exactly three courses.

If he studies Biology in a week, then he also studies Philosophy that week.

If he studies Economics in a particular week, then he does not study it in the following week.

In any particular week he studies not more than one of the subjects studied in the preceding week.

62. Which of the following is a possible sequence of combinations for the student in the two successive weeks?
- (a) Week 1 : Philosophy, Biology, Economics; Week 2 : Biology, Mathematics, Literature
  - (b) Week 1 : Philosophy, Biology, Mathematics; Week 2 : Philosophy, Biology, Literature
  - (c) Week 1 : Philosophy, Mathematics, Literature; Week 2 : Philosophy, Biology, Economics
  - (d) Week 1 : Biology, Mathematics, Literature; Week 2 : Philosophy, Economics, Mathematics

63. If the student studies Philosophy, Biology and Economics in the first week, which of the following combinations must be studied in the third week?
- (a) Philosophy, Biology and Economics
  - (b) Philosophy, Biology and Mathematics
  - (c) Philosophy, Economics and Mathematics
  - (d) Economics, Mathematics and Literature
64. If the student studies Philosophy, Literature and Mathematics in the first week, which of the following combinations must be studied in the eleventh week?
- (a) Philosophy, Literature and Mathematics
  - (b) Philosophy, Biology and Mathematics
  - (c) Philosophy, Economics and Mathematics
  - (d) Economics, Mathematics and Literature
65. If  $x$ ,  $y$  and  $z$  are consecutive negative integers, and if  $x > y > z$ , which of the following must be a positive odd integer?
- (a)  $xyz$
  - (b)  $(x - y)(y - z)$
  - (c)  $x - yz$
  - (d)  $x(y + z)$
66. Suppose one wishes to prove that "if all  $X$  are  $Y$ , then all  $Z$  are  $W$ ". To do this, it would suffice to show that
- (a) all  $Z$  are  $X$ , and all  $W$  are  $Y$
  - (b) all  $Y$  are  $Z$ , and all  $W$  are  $X$
  - (c) all  $X$  are  $Z$ , and all  $Y$  are  $W$
  - (d) all  $Z$  are  $X$ , and all  $Y$  are  $W$
67. Let  $X$  and  $Y$  be statements. If we want to *disprove* the claim that " $X$  implies  $Y$ ", we need to show that
- (a)  $X$  is false
  - (b)  $Y$  is false
  - (c)  $X$  is true, but  $Y$  is false
  - (d)  $Y$  is true, but  $X$  is false

68. Let  $X, Y$  and  $Z$  be statements. Suppose we know that  $X$  implies  $Y$ , and that  $Z$  implies  $X$ . We also know that  $Y$  is false. We can infer that
- (a)  $X$  is false, and  $Z$  is true
  - (b)  $X$  is true, and  $Z$  is false
  - (c) both  $X$  and  $Z$  are true
  - (d) both  $X$  and  $Z$  are false
69. Let  $X$  and  $Y$  be statements. Which of the following strategies is **not** a valid way to show that " $X$  implies  $Y$ "?
- (a) Show that some statements  $Z$  implies  $Y$ , and then show that  $X$  implies  $Z$
  - (b) Show that either  $X$  is false, or  $Y$  is true, or both
  - (c) Assume that  $X$  is false, and  $Y$  is true, and deduce a contradiction
  - (d) Assume that  $X$  is true, and  $Y$  is false, and deduce a contradiction
70. Let  $P(n, m)$  be a property about two integers  $n$  and  $m$ . If we want to prove that "for every integer  $n$ , there exists an integer  $m$  such that  $P(n, m)$  is true", then we should do the following
- (a) Let  $n$  and  $m$  be arbitrary integers. Then show that  $P(n, m)$  is true
  - (b) Find an integer  $m$  such that  $P(n, m)$  is true for every integer  $n$
  - (c) Let  $n$  be an arbitrary integer. Then find an integer  $m$  possibly depending on  $n$  such that  $P(n, m)$  is true
  - (d) Find an integer  $n$  and an integer  $m$  such that  $P(n, m)$  is true
71. Let  $X$  and  $Y$  be statements. If we know that  $X$  implies  $Y$ , then we can also conclude that
- (a)  $X$  is true, and  $Y$  is also true
  - (b) if  $X$  is false, then  $Y$  is false
  - (c) if  $Y$  is true, then  $X$  is true
  - (d) if  $Y$  is false, then  $X$  is false

72. Let  $X$ ,  $Y$  and  $Z$  be statements. Suppose we know that  $X$  implies  $Y$ , and that  $Y$  implies  $Z$ . If we also know that  $X$  is false, we can infer that
- (a)  $Y$  is true, and  $Z$  is false
  - (b)  $Y$  is false, and  $Z$  is true
  - (c) both  $Y$  and  $Z$  are false
  - (d) None of the above
73. The United States is a major exporter of
- (a) diamond
  - (b) bauxite
  - (c) coffee
  - (d) corn
74. The terms of trade are
- (a) the countries' production possibilities curve
  - (b) the autarky equilibrium
  - (c) the exchange rate of the two goods being traded
  - (d) the value of exports
75. Autarky means that
- (a) a country's consumption possibilities are given by its production possibilities
  - (b) equilibrium attained with the maximum gains from specialization and trade
  - (c) equilibrium has been reached with the maximum amount of international trade
  - (d) the nation has such a high standard of living that there are no poor people
76. Linear accelerator has the following characteristic
- (a) Depends on expectations and has the dimension of time
  - (b) Depends on expectations and has the dimension of inverse time
  - (c) Does not depend on expectations and has the dimension of time
  - (d) Does not depend on expectations and has no time dimension

77. If the saving propensity is 14% and the incremental capital output ratio is 4, and the population rate of growth is 3%, there is constant returns to scale and no technical progress
- (a) warranted rate of growth is greater than the natural rate of growth
  - (b) warranted rate of growth is less than the natural rate of growth
  - (c) the economy will always grow at 3% rate of growth
  - (d) the economy will always grow at more than 3% rate of growth
78. There are four bus routes between *A* and *B* and three bus routes between *B* and *C*. A man can travel round trip in number of ways by bus from *A* to *C* via *B*. If he does not want to use a bus route more than once, in how many ways can he make round trip?
- (a) 72
  - (b) 144
  - (c) 14
  - (d) 19
79. The Economics Nobel Prize for the year 2009 was awarded to
- (a) Elinor Ostrom and Oliver Williamson
  - (b) Paul Krugman
  - (c) John Nash
  - (d) Robert Aumann and Thomas Schelling
80. Consider the set  $A = \{x | 0 < x < 1\}$ . What is the minimum number that belongs to set *A*?
- (a) 0
  - (b) 0.001
  - (c) 0.00002
  - (d) There is no minimum number in set *A*
81. In the list of five countries given below, choose the one which has a positive trade surplus
- (a) USA
  - (b) Great Britain
  - (c) Greece
  - (d) China



82. Which one of the statements given below is correct for the year 2000-01?
- (a) The primary sector of the Indian economy is 50% of the GDP
  - (b) The tertiary sector of the Indian economy is 50% of the GDP
  - (c) The GDP contribution of the primary sector of the Indian economy is larger than that of the secondary sector
  - (d) The GDP contribution of the secondary sector of the Indian economy is larger than that of the tertiary sector
83. If utensils worth Rs 100 are produced with steel worth Rs 50, wages paid are Rs 10, depreciation of machinery is 0 and other material purchased is Rs 10, then value added in the process is
- (a) Rs 40
  - (b) Rs 50
  - (c) Rs 100
  - (d) Rs 10
84. If an economy produces GDP of Rs 30 billion per year with a capital stock of Rs 135 billion, then capital output ratio is a
- (a) stock variable with a value of Rs 4.5 billion
  - (b) stock variable with a value 4.5 years
  - (c) flow variable with a value of Rs 4.5 billion
  - (d) flow variable with a value of 4.5 as pure number
85. An economy has a proportionate income tax at the rate  $t$ , marginal propensity to consume of  $\alpha$  and marginal propensity to import of  $m$ , with values  $\alpha = 0.8$ ,  $t = 0.2$ ,  $m = 0.1$ . The short-run investment multiplier of the economy will be
- (a)  $1/[1 - \alpha(1 - t) + m] = 50/23$
  - (b)  $1/[1 - (\alpha - m)(1 - t)] = 25/11$
  - (c)  $1/[1 - \alpha(1 - t) - m] = 50/3$
  - (d)  $1/[1 - \alpha + t + m] = 2$

86. The 'Sub-prime Lending' crisis was originated in

- (a) India
- (b) USA
- (c) UK
- (d) China

87. In the following statements, 'investment' is meant to be investment from a macroeconomic point of view. The following transactions (i), (ii) and (iii) have taken place in the economy :

- (i) Your family has taken out a mortgage from a bank and purchased a new house with the loan advanced to your family by the bank.
- (ii) You have used your salary to buy share of the Steel Authority of India Ltd.
- (iii) You draw money from your savings bank account of State Bank of India (SBI) and invest in SBI mutual fund share.

Indicate which combination of statements is correct

- (a) Transaction in (i) represents an act of net zero investment, transaction in (ii) represents an act of net positive saving, transaction in (iii) represents an act of net positive investment
- (b) Transaction in (i) represents an act of net positive investment, transaction in (ii) represents an act of net positive saving, transaction in (iii) represents an act of net positive saving
- (c) Transaction in (i) represents an act of net positive investment, transaction in (ii) represents an act of net investment, transaction in (iii) represents an act of saving
- (d) Transaction in (i) represents an act of net positive investment, transaction in (ii) represents an act of net positive saving, transaction in (iii) represents an act of net zero saving

88. The sum of the first  $n$  odd integers is

- (a)  $n^2$
- (b)  $n^3$
- (c)  $n$
- (d)  $4n$

89. Which of the following will be an inverse function of  $f(x) = x^2$ ?

- (a)  $g(y) = 1/y$
- (b)  $g(y) = y^2$
- (c)  $g(y) = \frac{1}{2}y$
- (d) There is no inverse function

90. The share of the primary sector in the Indian Labour Force in 2000 was approximately around

- (a) 50 percent
- (b) 60 percent
- (c) 70 percent
- (d) 80 percent

91. The country with the largest external debt in the world today is

- (a) Brazil
- (b) Argentina
- (c) China
- (d) United States

92. The beginning of modern industry in India occurred in
- (a) the late 18th century
  - (b) the beginning of the 19th century
  - (c) the middle of the 19th century
  - (d) the turn of the 20th century
93. Market capitalization in the Bombay Stock Exchange (BSE) rose by 100 percent in a single year. This means that
- (a) the senserose rose by 100 percent during that year
  - (b) the value of shares traded at the BSE over the year increased by 100 percent when compared with the previous year
  - (c) the value of all outstanding shares of companies listed at the BSE rose by 100 percent
  - (d) the prices of every share listed at the BSE rose by 100 percent
94. Two events are said to be independent if
- (a)  $\text{Prob}(A \text{ and } B) = \text{Prob}(A) \cdot \text{Prob}(B)$
  - (b)  $\text{Prob}(A \text{ and } B) = \text{Prob}(A) + \text{Prob}(B)$
  - (c)  $\text{Prob}(A/B) = \text{Prob}(A) - \text{Prob}(B)$
  - (d)  $\text{Prob}(A/B) = \text{Prob}(A) - \text{Prob}(B) + \text{Prob}(A \text{ and } B)$
95. Which of the following is **not** a tool of monetary policy?
- (a) The tax rate
  - (b) The interest rate
  - (c) The cash-reserve ratio
  - (d) Open-market operations of the central bank

Read the following passage and answer the questions 96–100 :

"In the beginning, money was a commodity like any other, save that its physical characteristics allowed of its being divided into parts of varying but specific weight, and it had high enough worth in small enough bulk so that it could be readily carried around. Thus it served as an intermediate step in exchange, eliminating the inherent awkwardness of barter. And it was a convenient way of holding wealth—a storehouse of value.

But in major measure the separate identity of money, its personality, was discovered with the establishment of banks; through banks the supply of money could be increased or, on occasion, sharply diminished, and this, more or less at will. The funds thus made available could be used for investment, necessary or frivolous consumption or the needs of the State.

Together, the deposits and the banknotes were in excess of the value of the metal on which they were based. This, however, was entirely safe and acceptable for so long as everyone—original depositors, borrowers, noteholders—did not come at the same time for the hard money. Unless there were fear, panic or spreading rumour and unease about the competence and solidity of the bank—all by no means negligible possibilities—this would not happen.

Given the profits possible from this manufacture of money—the return in interest for an effortless act of lending—the temptation to overdo a quite wonderful thing was obvious. Out of temptation were born the central banks and much of the structure of modern bank regulation. In return for various privileges, including in latter times the exclusive right to issue notes, central banks came into existence. They then proceeded to regulate the lending and money creation of the lesser banks, which they did in an inconveniently disciplinary way by returning to the smaller banks their notes for payments in metal and by enforcing minimum levels of reserves against deposits."

(John Kenneth Galbraith, A History of Economics : The past as the present, Chapter 12)

96. Galbraith argues that

- (a) money was a commodity like any other until central banks were created
- (b) money was at first a commodity that could be easily divided by weight and carried around easily
- (c) the physical feature of money being something that can be carried around easily gives it a special personality
- (d) money can never be more than an intermediate feature in exchange

97. The presence of banks means that

- (a) money in circulation can be in excess of the supply of metal that is money
- (b) deposits in banks must always be equal to the notes issued by banks
- (c) money is always safe in banks and this is acceptable to all
- (d) banks are the basic storehouse of value

98. Central banks exist because

- (a) banks earn profits—in the form of a return in interest—from an effortless act of lending
- (b) the funds loaned out can be used for investment, necessary or frivolous consumption or the needs of the State
- (c) all banks want the exclusive power to issue notes
- (d) it is necessary to regulate the lending and money creation of lesser banks, given the temptation to overdo lending

99. Minimum levels of reserves against deposits

- (a) is a rule that money creation necessarily imposes on all banks
- (b) are necessary because depositors, borrowers and noteholders all come to banks at the same time for their money
- (c) are part of the regulatory actions of central banks
- (d) are returns for various privileges that are accorded to banks

100. The supply of money in an economy can be increased or decreased at will

- (a) because of the inherent awkwardness of barter
- (b) through the activities of banks
- (c) because money is a storehouse of value
- (d) since deposits and banknotes cannot be in excess of the metal on which they are based

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**30**

**ENTRANCE EXAMINATION, 2009**

**M.A. ECONOMICS**

[ Field of Study Code : ECOM (179) ]

*Time Allowed : 3 hours*

*Maximum Marks : 100*

**INSTRUCTIONS FOR CANDIDATES**

- (i) This question paper has *four parts* Parts—A, B, C and D.
- (ii) Part—A has *25 multiple-choice questions, each carrying 1 mark. All questions must be attempted. The questions of Part—A must be answered in Sheet—1 provided for the purpose by putting a circle around the correct answer, e.g., @. Circling more than one letter or in between the letters will be treated as a wrong answer.*
- (iii) Part—B has *10 questions. Each question is of 5 marks. You are required to do any 6 questions.*
- (iv) Part—C has *3 questions. Each question is of 10 marks. You are required to answer all 3 questions.*
- (v) In Part—D, you are required to write an essay on any one of the given five topics. The essay is of 15 marks.
- (vi) The answers to all questions are to be given in the question paper in the appropriate space provided for each.

**PART—A**

Answer all questions. Each question carries 1 mark

- A1.** The essence of Engel's law is that as household incomes rise
- (a) the savings rate increases
  - (b) the proportion of income spent on food declines
  - (c) the expenditure on food declines
  - (d) the proportion of income spent on luxuries declines
  - (e) None of the above
- A2.** I had Rs 25 with me when I went to the market and I spent Rs 7 in all. What percentage of the total did I have at the end of my market visit?
- (a) 72 per cent
  - (b) 71.5 per cent
  - (c) 28 per cent
  - (d) 63.5 per cent
  - (e) None of the above
- A3.** A competitive firm has constant marginal cost of Rs 12 per unit of output. To maximise profit, it sells
- (a) 12 units of output
  - (b) any amount of output
  - (c) any amount of output provided the price per unit is Rs 12 or more
  - (d) any amount of output provided the average cost is increasing
  - (e) None of the above
- A4.** The dependency ratio is the ratio of
- (a) children to adults in the population
  - (b) unemployed to employed workers in the labour force
  - (c) foreign aid to total GNP
  - (d) non-working age-group population to working age-group population
  - (e) None of the above
- A5.** The capital-output ratio in an economy is the ratio of
- (a) a flow variable to a stock variable
  - (b) two flow variables
  - (c) two stock variables
  - (d) a stock variable to a flow variable
  - (e) None of the above



- A6.** The Gini coefficient provides a measure of
- (a) the level of poverty
  - (b) the level of relative inequality
  - (c) disguised unemployment
  - (d) the rate of growth
  - (e) None of the above
- A7.** The marginal propensity to consume is usually expressed as
- (a) a pure number
  - (b) paise per unit of time
  - (c) rupees per unit of time
  - (d) a number per unit of time
  - (e) None of the above
- A8.** Which of the following is a necessary and sufficient condition for consumers' equilibrium?
- (a) Marginal rate of substitution is equal to the price ratio
  - (b) Marginal rate of substitution is equal to the price ratio, if all goods are being purchased at equilibrium
  - (c) Marginal rate of substitution is equal to the price ratio, provided marginal rate of substitution is diminishing
  - (d) Marginal utilities are equal to prices
  - (e) None of the above
- A9.** During the Great Depression
- (a) unemployment and prices increased, and output decreased
  - (b) unemployment increased, and output and prices decreased
  - (c) unemployment and prices decreased, and output increased
  - (d) unemployment and output decreased, and prices increased
  - (e) unemployment and output increased, and prices decreased
- A10.** Suppose two fair, six-sided dice are rolled. The probability of obtaining a value from the first die that is equal to the value from the second die is
- (a)  $1/6$
  - (b)  $5/18$
  - (c)  $9/12$
  - (d)  $1/2$
  - (e)  $1/12$

- A11.** Which of the following is not a leak from the circular flow of income/expenditure?
- (a) Taxes
  - (b) Transfers
  - (c) Net imports
  - (d) Savings
  - (e) None of the above
- A12.** CENVAT is related to
- (a) Sales tax
  - (b) Excise duty
  - (c) Customs duty
  - (d) Service tax
  - (e) None of the above
- A13.** According to official estimates, the proportion of people living below the poverty line in India is
- (a) below 15 per cent
  - (b) between 15 and 25 per cent
  - (c) between 25 and 35 per cent
  - (d) between 35 and 45 per cent
  - (e) above 45 per cent
- A14.** If  $E(X^2) = 16$  and  $\text{var}(X) = 4$ , then  $E[(2 + 3X)^2]$  is approximately equal to
- (a) 123
  - (b) 156
  - (c) 143
  - (d) 150
  - (e) None of the above
- A15.** GDP equals GNP, when
- (a) the value of exports of goods equals the value of imports of goods
  - (b) the value of exports less imports equals the net flow of invisibles into the country
  - (c) the value of exports of goods and services equals the value of imports of goods and services
  - (d) there are no net factor incomes from abroad
  - (e) None of the above

- A16.** The relationship between the stock of money and the stock of high-powered money is
- (a) determined solely by the reserve-deposit ratio
  - (b) determined solely by the currency-deposit ratio
  - (c) between zero and one
  - (d) the money multiplier
  - (e) the income velocity of money
- A17.** GDP does not include
- (a) government spending to clean up pollution caused by factories
  - (b) payments to technical consultants abroad
  - (c) additions to inventory stocks of intermediate goods
  - (d) additions to inventory stocks of final goods
  - (e) None of the above
- A18.** The elasticity of a variable  $X$  with a variable  $Y$  is a constant. Therefore
- (a)  $X$  is a linear function of  $Y$
  - (b)  $X$  is a linear function of  $\ln Y$
  - (c)  $\ln X$  is a linear function of  $Y$
  - (d)  $\ln X$  is a linear function of  $\ln Y$
  - (e) None of the above
- A19.** Suppose only a single firm has the technology to produce a commodity for which the demand curve is perfectly elastic. Total variable cost of the firm increases more than proportionally with firm output. Which of the following conditions must necessarily be true for the firm at equilibrium?
- (a) Average revenue = Marginal cost
  - (b) Average revenue > Marginal cost
  - (c) Average revenue > Average cost
  - (d) Average revenue > Marginal revenue
  - (e) None of the above
- A20.** A student discovers that the marks she has obtained (63 out of 100) in a recent test was the 73rd percentile in the frequency distribution of test scores. Suppose 1000 students wrote the test. This means that
- (a) at least 73 per cent of the students got 73 or more
  - (b) at least 270 students got 63 or more
  - (c) at least 270 students got 63 or less
  - (d) at least 27 per cent of the students got 73 or more
  - (e) None of the above

- A21.** An investment is worth-making, if over the lifetime of the project
- (a) cash inflows are positive
  - (b) net cash inflows (inflows minus outflows) are positive
  - (c) cash inflows discounted by an appropriate rate of interest are positive
  - (d) net cash inflows (inflows minus outflows) discounted by an appropriate rate of interest are positive
  - (e) None of the above
- A22.** The acceleration principle states that the rate of investment in the economy is proportional to
- (a) the rate of increase in aggregate demand
  - (b) the rate of increase in unplanned inventories
  - (c) the rate of increase in business savings
  - (d) the rate of increase in the rate of profit
  - (e) None of the above
- A23.** The Marshall-Lerner conditions relate to the effect on the balance of trade of
- (a) deflation
  - (b) deindustrialisation
  - (c) depression
  - (d) devaluation
  - (e) None of the above
- A24.** Suppose a market demand curve for an individual is given by  $q = 100 - p$ . The market price prevailing is 50. The supplier of the units is a monopolist and wants to perform first-degree price discrimination. He will then
- (a) charge a price of 50 for all units
  - (b) charge a price of 60 for the first 25 units and a price of 50 for the rest
  - (c) charge a price of 1250 per unit
  - (d) set up a two-part tariff in pricing and charge the consumer a flat fee of 1250 and a price of 50 per unit
  - (e) set up a two-part tariff in pricing and charge the consumer a flat fee of 1250 and a price of 60 per unit
- A25.** The production function  $Q = x_1^{1/2} x_2^{1/3}$ , where  $Q$  is output and  $x_1, x_2$  are quantities of inputs, reflects
- (a) constant returns to scale
  - (b) increasing returns to scale
  - (c) decreasing returns to scale
  - (d) no returns to scale
  - (e) None of the above

**PART—B**

This Part has ten questions. Each question is of 5 marks.  
You are required to do any six questions

- B1.** If the short-run average cost for a firm is given by  $(Q - 15)2 + 4$ , where  $Q$  stands for units of output, then compute the level of output at which short-run marginal cost is equal to average cost.
- B2.** Does the following maximisation problem have a solution?  
Maximise  $x^2$  subject to  $0 < x < 1$   
Explain your answer.
- B3.** In a two-good economy, the utility function is given by  $U(x, y) = \min(x, y)$ . The prices of both  $x$  and  $y$  are Re 1 per unit. The consumer has a budget of Rs 100. What is his optimum consumption bundle?
- B4.** Consider an economy operating at less than full employment, in which the government has a balanced budget. The marginal propensity to consume is 0.8 and the GDP falls short of full employment output by 5000.  
(a) What is the minimum required increase in government spending that could bring about full employment in a closed economy?  
(b) How would this change in an open economy if exports are constant and the economy has an import propensity of 0.2?
- B5.** Construct an example to prove that the following argument is incorrect :  
 $A$  and  $B$  are two non-empty sets of positive integers.  
If  $B$  contains a number, then  $A$  contains the same number.  
 $B$  does not contain the number 2.  
Therefore,  $A$  does not contain the number 2.
- B6.** In a closed economy in which the GDP is growing at 7 per cent per annum and the population at 2 per cent per annum, the income elasticity of demand for food is 0.4. If food prices are determined by demand and supply, at what rate must food supply increase, if the price of food is to remain constant?
- B7.** In an economy with only two goods  $X$  and  $Y$ , the price of  $X$  increased from 1 in period 1 to 1.5 in period 2, while that of  $Y$  remained constant at 1. Consumer  $A$  consumed 2 units of  $X$  and 3 units of  $Y$  in period 1, and 3 units of  $X$  and 2 units of  $Y$  in period 2. Consumer  $B$  consumed 3 units of  $X$  and 2 units of  $Y$  in period 1, and 1 unit of  $X$  and 3 units of  $Y$  in period 2. Assuming that tastes of these two individuals have not changed, which individual is clearly better off in period 2 compared to period 1?

**B8.** Consider the following components of the balance of payments :

- Merchandise trade account
- Invisibles account
- Capital account

State the category to which each of the following transactions belongs (Write 'None of the above' if none of the above accounts is applicable) :

Import of chocolate

Export of software

Change in official reserves

External commercial borrowing

Tourism abroad

Royalty payments for technology

Unilateral transfers in the form of workers' remittances

Import of capital equipment

Purchase of foreign securities

Loans from the World Bank

**B9.** If  $a$  and  $b$  are two positive numbers, define their arithmetic mean and their geometric mean. Prove that the arithmetic mean cannot be less than the geometric mean.

**B10.** A 10 kg basket of Royal Delicious Grade A apples sells for \$ 15 in the US, and the same apples are priced in India at Rs 100 per kg. The nominal exchange rate is Rs 50 per US dollar.

- (a) What is the real exchange rate based on apples alone?
- (b) Comment on using the above real exchange rate as an indicator of Purchasing Power Parity.

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**PART—C**

This Part has **three** questions. Each question carries 10 marks.  
You are required to answer **all** questions

**C1.** Consider the following passage :

"One of the things which we have learned—a general point which must be emphasized at the outset—is to distinguish between those historical questions which can be usefully discussed in terms of the notion of statistical uniformity and those which cannot. Every historical event has some aspect in which it is unique, but nearly always there are other aspects in which it is a member of a group, often of quite a large group. If it is one of the latter aspects in which we are interested, it will be the group, not the individual, on which we shall fix our attention; it will be the average, or norm, of the group which is what we shall be trying to explain. ...Economics is rather specially concerned with such statistical behaviour.

The historical phenomena to which a theory of history might apply are those which, in the light of our interest in them, can be regarded as having this statistical character. Most of the phenomena of economic history (however widely considered) do have it; the questions we want to ask about economic history deal mainly with groupings that can be made to possess it. But the distinction is not, in principle, a distinction between economics and other kinds of history. The distinction is between an interest in general phenomena and an interest in particular stories. Whenever our interest is in general phenomena, theory (economic or other social theory) may be relevant; otherwise usually not."—*J. R. Hicks*

- (a) How many attributes of historical events does Hicks identify?
- (b) What is the fundamental basis of distinction between these attributes?
- (c) What is the reason for making this distinction?
- (d) According to Hicks, what feature do most phenomena of economic history have?
- (e) According to Hicks, when is theory relevant?



C2. Consider the following table with data on GDP by sectors :

	<i>Agriculture</i>		<i>Industry</i>		<i>Services</i>	
	At current prices	At constant prices	At current prices	At constant prices	At current prices	At constant prices
1990-91	151	340	111	215	253	529
1991-92	176	333	122	214	296	552
1992-93	198	355	143	221	341	582
1993-94	229	367	166	237	397	619
1994-95	264	385	203	262	458	655
1995-96	287	382	248	297	548	718
1996-97	345	420	280	320	635	768
1997-98	366	409	300	327	735	838
1998-99	420	435	332	338	863	905
1999-00	447	447	350	350	990	990
2000-01	450	445	392	373	1083	1046
2001-02	487	473	411	381	1200	1118
2002-03	472	439	463	407	1326	1202
2003-04	532	483	509	432	1497	1308
2004-05	552	482	598	468	1727	1437
2005-06	616	511	678	506	1982	1596
2006-07	695	530	790	560	2304	1774

- Between 1990-91 and 2006-07, which sector grew most rapidly and which most slowly in current price terms? Was it the same in constant price terms?
- How did the share of the agriculture and services in total GDP change between 1990-91 and 2006-07? Answer for both constant and current price terms.
- Was the growth of industry faster, slower or the same as that of aggregate GDP over the entire period?
- Calculate the implicit price deflator for agriculture in 2000-01 and for services in 2006-07.

- C3.** Consider an economy wherein equilibrium  $Y = C + I - M$  and  $C = 0.75Y$ , where  $M = 0.2C + 0.4I$  and  $I$  is autonomously determined.
- (a) What is the value of the investment multiplier in the economy?
  - (b) If the maximum value of imports of goods and services which the economy can finance is 60000 units of the economy's currency, what is the maximum value of  $Y$  possible in such an equilibrium?
  - (c) Suppose the economy can finance an additional 1 currency unit of imports. What is the increase in the maximum possible value of  $Y$ ?

**PART—D**

Write an essay on *any one* of the following topics.  
The essay carries 15 marks

- (a) Is it correct to argue that the current global financial crisis was caused by financial deregulation?
- (b) Under what conditions can high aggregate income growth be accompanied by increased poverty?
- (c) Is labour market inflexibility responsible for slow industrial growth in India?
- (d) What factors explain the recent rise and decline in global food prices?
- (e) What are the assumptions and the basic propositions made in the Lewis two-sector growth model?

# 30

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ENTRANCE EXAMINATION, 2008

M.A. ECONOMICS

Time Allowed : 3 hours

Maximum Marks : 100

## INSTRUCTIONS FOR CANDIDATES

- (i) This question paper has *three* Sections.
- (ii) Section—A has 30 multiple-choice questions of 1 mark each, all of which must be attempted. Answer by putting a circle around the letter before the chosen alternative, e.g., (a). Any ambiguous marks (such as circling more than one letter or between two letters) will be treated as a wrong answer.
- (iii) Section—B has 10 multiple-choice questions of 3 marks each, all of which must be attempted. Answer by putting a circle around the letter before the chosen alternative, e.g., (a). Any ambiguous marks (such as circling more than one letter or between two letters) will be treated as a wrong answer.
- (iv) Section—C contains 6 problems of which any 4 must be answered in the space provided. Each problem carries 10 marks.
- (v) The answers to all questions are to be given in the question paper itself in the appropriate space provided for each.

**SECTION—A**

Answer **all** questions. Each question carries 1 mark

- A1.** Among twenty-five articles, nine are defective, six having only **minor defects** and three having major defects. Determine the probability that an article **selected at random** has major defects given that it has defects.
- (a)  $1/3$
  - (b)  $1/4$
  - (c)  $6/25$
  - (d)  $2/25$
  - (e) None of the above
- A2.** A standard normal distribution has
- (a) mean equal to 1 and variance equal to 1
  - (b) mean equal to 0 and variance equal to 1
  - (c) mean equal to 0 and **standard deviation** equal to 0
  - (d) mean equal to -1 and variance equal to 1
  - (e) None of the above
- A3.** In a given group, the correlation between height, measured in feet, and weight, measured in pounds, is +0.68. Which of the following would alter the value of  $r$ ?
- (a) If height is expressed in centimeters
  - (b) If weight is expressed in kilograms
  - (c) Both of the above will affect  $r$
  - (d) Neither of the above changes will affect  $r$
  - (e) None of the above
- A4.** If a worker's marginal product of labour is 6 units of the good per hour and the price of the good is Rs 5, what is the highest hourly wage that a firm can pay her?
- (a) Rs 11
  - (b) Re 1
  - (c) Rs 30
  - (d) Rs 6
  - (e) Rs 5
- A5.** The optimal point on the Production Possibility Frontier (PPF) depends on
- (a) Efficiency
  - (b) Preferences
  - (c) Feasibility
  - (d) All of the above
  - (e) None of the above

- A6.** Suppose a technological advance in toothpaste manufacturing reduces the cost of producing each tube by Re 1. What will be the effect on supply?
- (a) Quantity supplied will increase
  - (b) The supply curve will shift inward
  - (c) There will be no change in supply
  - (d) Demand will go down since there will be less toothpaste supplied
  - (e) The supply curve will shift outward
- A7.** Hari's total spending on grapes rises when the price falls from Rs 2/kg to Re 1/kg. What can we say about the price elasticity of his demand for grapes?
- (a) It is greater than 1
  - (b) It is less than 1
  - (c) It is equal to one
  - (d) All of the above
  - (e) None of the above
- A8.** Last year, Priya bought 6 pairs of shoes when her income was Rs 40,000. This year, her income is Rs 50,000, and she purchased 10 pairs of shoes. Priya
- (a) treats shoes as an inferior good
  - (b) treats shoes as a luxury good
  - (c) prefers shoes to boots
  - (d) has a price-inelastic demand for shoes
  - (e) has a price-elastic demand for shoes
- A9.** When an economist refers to the long-run, she is referring to
- (a) a length of time no shorter than 2 years
  - (b) a length of time no shorter than 1 month
  - (c) approximately the length of time such that all inputs remain fixed
  - (d) approximately the length of time such that all inputs are variable
  - (e) a marathon as opposed to a mile
- A10.** Aparna makes chocolates. If the total cost of 10 chocolates is Rs 10, and the total cost of 30 chocolates is Rs 20, what does this tell us about the marginal cost of producing the 31st chocolate?
- (a) It will be greater than Re 0.50
  - (b) It will be less than Re 0.50
  - (c) It will be exactly Re 0.50
  - (d) It will revert to Re 1
  - (e) Any of the above is possible

- A11.** India's current annual income per head of population (i.e., net national product per capita at factor cost), as given in the Economic Survey, 2008, is in the region of
- (a) Rs 16,000
  - (b) Rs 33,000
  - (c) Rs 22,000
  - (d) Rs 12,000
  - (e) Rs 40,000
- A12.** If  $X_1, X_2, \dots, X_n$  are non-negative real numbers, then
- (a) Arithmetic Mean < Geometric Mean
  - (b) Geometric Mean  $\leq$  Arithmetic Mean
  - (c) Arithmetic Mean = 0.5 (Geometric Mean)
  - (d) there is no fixed relationship between Arithmetic Mean and Geometric Mean
  - (e) None of the above
- A13.** If  $(a/b) > (b/c)$ , then
- (a)  $ac > b^2$
  - (b)  $ac < b^2$
  - (c)  $ac = b^2$
  - (d) No inference can be made regarding the relative magnitude of  $ac$  and  $b^2$
  - (e) None of the above
- A14.** Let  $f(x) = (\log(x))/x$ , where  $0 < x < 1$ . Then for all  $x$  such that  $0 < x < 1$
- (a)  $f'(x) < 0$
  - (b)  $f'(x) > 0$
  - (c)  $f'(x) > 0$ , if  $0 < x < 0.5$  and  $f'(x) < 0$ , if  $0.5 \leq x < 1$
  - (d) can't say anything about the sign of  $f'(x)$
  - (e) None of the above
- A15.** Given two numbers,  $a = (3\sqrt{7} + 4\sqrt{7})^2$  and  $b = 343$ , which of the following must be true?
- (a)  $a > b$
  - (b)  $b > a$
  - (c)  $a = b$
  - (d)  $a = b/2$
  - (e) None of the above

- A16.** Beena's average score after 8 class tests is 84. In her first seven class tests Beena's average score was 85. In her last class test Beena has scored
- (a) 82
  - (b) 87
  - (c) 96
  - (d) 77
  - (e) None of the above
- A17.** The 'Sub-Prime Lending' crisis originated in
- (a) India
  - (b) USA
  - (c) UK
  - (d) Australia
  - (e) None of the above
- A18.** A fair die has given the number 6 on five consecutive throws. What is the probability that the next throw will also give the number 6?
- (a) 0
  - (b)  $1/30$
  - (c)  $1/6$
  - (d)  $5/6$
  - (e) None of the above
- A19.** The number  $0.999999\dots$  is
- (a) exactly equal to 1
  - (b) slightly less than 1
  - (c) slightly more than 1
  - (d) All of the above
  - (e) None of the above
- A20.** Let  $S = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots$ . Then S is equal to
- (a) 2
  - (b) 4
  - (c) 6
  - (d) 1
  - (e) The sum does not converge to any finite value

- A21.** Suppose  $A$ ,  $B$  and  $C$  are three non-empty sets such that  $B \subset C$  and  $(C - A) \cap B = \phi$ . Which of the following statements is then necessarily true?
- (a)  $A \subset C$
  - (b)  $B \subset A$
  - (c)  $(A \cup B) \subset C$
  - (d)  $C \subset (A \cup B)$
  - (e) None of the above
- A22.** Suppose any one but the minimum of a set of 10 positive real numbers is replaced by a number which is greater than it. If the range of a set of numbers is taken as the measure of inequality amongst the numbers in that set then after replacement
- (a) inequality will increase
  - (b) inequality will decrease
  - (c) inequality cannot increase
  - (d) inequality cannot decrease
  - (e) None of the above
- A23.** If a riskless bond promises a fixed annual payment of Rs 35 in perpetuity and the current market rate of interest is 7% per annum then the market value of the bond is
- (a) Rs 50
  - (b) Rs 500
  - (c) Rs 5000
  - (d) Rs 2450
  - (e) None of the above
- A24.** In W. Arthur Lewis' model of growth in a dual economy the rate of growth of the money wage rate in the modern sector is
- (a) zero
  - (b) constant
  - (c) equal to the rate of inflation
  - (d) determined by the rate of growth of the labour force
  - (e) None of the above
- A25.** If every unit increase in a variable  $X$  is associated with a half unit decrease in a variable  $Y$ , then the correlation coefficient between  $X$  and  $Y$  is
- (a)  $-1$
  - (b)  $-0.5$
  - (c)  $0.5$
  - (d)  $1$
  - (e) None of the above



- A26.** Suppose the utility function of a person is  $U(x, y) = 16x + 13y$ , where  $x$  and  $y$  are the quantities consumed of two commodities  $X$  and  $Y$ . If the unit price of  $X$  is Rs 13 and the unit price of  $Y$  is Rs 11, in equilibrium the household will choose a commodity bundle
- (a) containing only  $X$
  - (b) containing only  $Y$
  - (c) containing both  $X$  and  $Y$
  - (d) containing at least some  $Y$
  - (e) None of the above
- A27.** Over the last two years the US Dollar has been
- (a) appreciating with respect to other major currencies
  - (b) depreciating with respect to other major currencies
  - (c) showing no trend with respect to other major currencies
  - (d) All of the above
  - (e) None of the above
- A28.** The terms of trade for a country refers to
- (a) the ratio of its currency to other currencies
  - (b) the ratio of its export prices to import prices
  - (c) the ratio of the value of its exports to the value of its imports
  - (d) the ratio of its export production costs to import production costs
  - (e) None of the above
- A29.** If an individual deposits a sum of money in a bank, then the amount of additional credit that the banking system can create is
- (a) a fraction of that sum defined by the cash reserve ratio
  - (b) a fraction of that sum defined by the statutory liquidity ratio
  - (c) a multiple of that sum defined by the cash reserve ratio
  - (d) a multiple of that sum defined by the statutory liquidity ratio
  - (e) None of the above
- A30.** Which of the following constitutional amendments deals with the Panchayati Raj Institutions?
- (a) 43rd Amendment
  - (b) 73rd Amendment
  - (c) 86th Amendment
  - (d) 93rd Amendment
  - (e) 2nd Amendment

**SECTION—B**

Answer all questions. Each question carries 3 marks

- B1.** You are given the following data for a country.  $S$  and  $I$  refer to private savings and investment,  $G$  and  $T$  to government expenditure and Tax revenues, and  $X$  and  $M$  refer to Exports and Imports of goods and services :

Year	$X-M$	$G-T$	$S-I$
2005	150		150
2006		- 50	- 130
2007	-200	345	

The missing values in the table above are

- (a)  $G-T = 0$ ,  $X-M = -80$  and  $S-I = 145$   
(b)  $G-T = 0$ ,  $X-M = 80$  and  $S-I = 145$   
(c)  $G-T = 80$ ,  $X-M = 0$  and  $S-I = 145$   
(d)  $G-T = 0$ ,  $X-M = 80$  and  $S-I = -145$
- B2.** A population consists of the numbers [2003, 1999, 2001, 1997, 2000, 2005, 1995]. The variance of the population is  
(a) 11.6  
(b) the mean deviation  
(c) 10  
(d) 2010
- B3.** Suppose Rs 1,00,000 are deposited in an account for five years at an interest rate of 10% per year, to be compounded annually. How much money would be there at the end of 5 years?  
(a) Rs 1,61,051  
(b) Rs 1,60,000  
(c) Rs 1,51,051  
(d) Rs 1,50,000
- B4.** If you integrate the function  $f(x) = 1/x$  from 1 to 3, you get  
(a) 0  
(b) 2  
(c)  $\log 3$   
(d) None of the above
- B5.** If  $a < b + \epsilon$ , for all  $\epsilon > 0$ , then  
(a)  $a < b$   
(b)  $a \leq b$   
(c)  $a > 0$   
(d) Can't say anything from the given information

- B6.** A monopolist faces a demand curve  $q(p) = 1/p$ . He incurs a cost of Rs 3 per unit of output produced. There is no fixed cost. His optimal output choice is
- (a) 2
  - (b) 3
  - (c) 0
  - (d) No such optimal output exists
- B7.** Suppose aggregate income in an economy is equal to total wages plus total profits. 40% of all profits are saved. If the share of wages in aggregate income is 60% and the rate of saving in the economy is 0.25, the fraction of wages saved in the economy is
- (a) 0.09
  - (b) 0.15
  - (c) 0.16
  - (d) 0.24
- B8.** Suppose in an economy  $Y = C + I$ ,  $C = 500 + 0.8Y$ ,  $I = 1000$ , supply of money  $M_s = 1000$ , transaction demand for money  $M_{DT} = 0.1Y$ , speculative demand for money  $M_{DS} = 1000 - 75r$ , where  $r$  is the percentage rate of interest. What is the equilibrium value of  $r$  in the economy?
- (a) 0.05
  - (b) 0.1
  - (c) 5
  - (d) 10
- B9.** Suppose that the exchange rate of the Indian rupee appreciates by 10 per cent relative to the currencies of India's trading partners. Over the same period, inflation in India is 8 per cent compared to 3 per cent inflation in the trading partners. What is the change in India's real exchange rate?
- (a) 5 per cent appreciation
  - (b) 10 per cent appreciation
  - (c) 15 per cent appreciation
  - (d) 5 per cent depreciation
- B10.** A stratified sample of households is selected for a survey. The population is divided in two strata and 25 per cent of households in stratum A and 10 per cent of households in stratum B are selected through a process of random selection. Data collected in the survey show that the income of sample households are as follows :
- |             |        |        |        |        |       |     |
|-------------|--------|--------|--------|--------|-------|-----|
| Stratum A : | 2000 ; | 1000 ; | 3000 ; | 4000 ; | 5000  |     |
| Stratum B : | 500 ;  | 100 ;  | 200 ;  | 300 ;  | 400 ; | 100 |
- The average income of households in the population is
- (a) 1509
  - (b) 1650
  - (c) 950
  - (d) None of the above

**SECTION—C**

Answer any four questions. Each question carries 10 marks

**C1.** The following data are given for an economy for a particular year :

	Rs (in crores)
GDP at Factor Cost	10,000
Net Factor Income from Abroad	500
Net Indirect Taxes	1,500
Government (Non-Investment) Expenditure at Market Prices	1,500
Current Account Deficit on Balance of Payments	500
Gross Savings of Government	-300

- (a) Calculate GDP at market prices. 1  
(b) Calculate GNP at market prices. 1  
(c) If private consumption expenditure is 0.75 times the GNP at market prices, calculate Gross Investment. 2  
(d) Calculate Gross Savings in the economy. 2  
(e) Calculate Gross Private Savings in the economy. 2  
(f) Calculate the private sector's savings ratio out of its disposable income. 2

**C2.** Consider the following text :

"The main point is that technical change and capital accumulation go hand in hand, and it is not really possible to isolate the effects of increased knowledge or ability or know-how from the effect of accumulation of capital. Nor is it possible to distinguish, in general, the technical change which is the result of some brand new discovery from that which merely represents an increase in know-how in the ability to use and exploit knowledge which has already existed, in some shape or another, in the minds of some people. Further, just as technical progress causes accumulation, the process of accumulation stimulates the growth of knowledge and of know-how. Hence it is useless to analyse the effects of capital accumulation in terms of production function which assumes a given state of knowledge, and then assumes that this function continually shifts upwards with the progress of knowledge." (Nicholas Kaldor)

Based on this text answer the following :

- (a) What are the types of technical change that the author mentions here?  
(b) What is the relationship between technical change and capital accumulation?  
(c) Can the effects of technical change be clearly distinguished from the effect of capital accumulation?  
(d) What kind of production function does the author feel is *not* useful in analyzing the effects of capital accumulation?  
(e) Why is such a production function not useful in this way, according to the author?

- C3.** There were four candidates, namely,  $A$ ,  $B$ ,  $C$  and  $D$ , for an award.
- (i) Only one of the four candidates had a distinction both in Mathematics and Literature.
  - (ii) Only one candidate had a distinction both in Mathematics and Philosophy.
  - (iii) Only one candidate had a distinction both in Mathematics and History.
  - (iv) Only one candidate had a distinction both in Literature and Philosophy.
  - (v) Only one candidate had a distinction both in Literature and History.
  - (vi) Only one candidate had a distinction both in Philosophy and History.
  - (vii) Both  $A$  and  $B$  had a distinction in Mathematics.
  - (viii) Both  $C$  and  $D$  had a distinction in Literature.
  - (ix) Both  $B$  and  $C$  had a distinction in Philosophy.
  - (x)  $D$  had a distinction in History.

The award was given to the candidate who had distinction in more subjects than any other candidate. Which candidate was given the award? (Show the steps of your answer.)

- C4.** A chocolate bar has been stolen by either child  $A$  or child  $B$ . One of  $A$  and  $B$  is innocent. Here are the statements of witnesses and other interested parties

- $C$  :  $A$  has not stolen the chocolate bar.
- $D$  :  $A$  has stolen things in the past.
- $E$  :  $B$  has stolen things in the past.
- $F$  :  $E$  has stolen things in the past.
- $G$  :  $D$  and  $E$  are both right.
- $H$  :  $D$  and  $F$  are both right.
- $I$  :  $E$  or  $F$  is right, and may be both.
- $J$  :  $G$  or  $H$  is right, and may be both.
- $K$  :  $D$  and  $I$  are both right.
- $L$  :  $J$  is right and  $K$  is wrong.

Suppose that  $C$  and  $L$  are either both telling the truth or both lying.

Who stole the chocolate bar? (Show the steps of your answer.)

- C5.** One of  $A$ ,  $B$ ,  $C$  and  $D$  has committed a crime with the help of another one of them. Here are the statements given by the four individuals. The statements of the criminal and his accomplice are false and those of the remaining two are true.
- $A$  : If  $B$  is guilty of something, then  $C$  must be innocent.
  - $B$  : If  $A$  is innocent, then  $C$  must be guilty.
  - $C$  : If  $B$  was the killer, then  $D$  must have had nothing to do with the crime.
  - $D$  : I am innocent.

Which of the four is the criminal and who was his accomplice? (Show the steps of your answer.)

- C6.** Show that  $\log(x) < x$  for all  $x > 0$ . Here  $\log(x)$  stands for natural logarithm.

**JNUEE: Question Papers (2003-2007) R $\text{\$}$ .20/-**

**30**

**ENTRANCE EXAMINATION, 2007**

**M.A. ECONOMICS**

*Time Allowed* : 3 hours

*Maximum Marks* : 100

**INSTRUCTIONS FOR CANDIDATES**

- (i) This question paper has four Sections.
- (ii) Section—A has 25 multiple-choice questions of 1 mark each, all of which must be attempted. Answer by putting a circle around the letter before the chosen alternative, e.g., @. Any ambiguous marks (such as circling more than one letter or between two letters) will be treated as a wrong answer.
- (iii) Section—B has 11 problems of which any 9 problems must be answered in the space provided. Each problem carries 5 marks.
- (iv) Section—C contains 4 problems of which any 2 must be answered in the space provided. Each problem carries 10 marks.
- (v) Section—D contains a passage and a set of questions to be answered on the basis of this passage. Attempt all the questions in the space provided. This section carries a total of 10 marks.
- (vi) The answers to all questions are to be given in the question paper itself in the appropriate space provided for each.

**SECTION—A**

Answer **all** questions. Each question carries 1 mark

- A1.** If  $x, y$  are real numbers and it is known that  $x \cdot y < 2$  (the product of  $x$  and  $y$  is less than 2), then it **MUST** be the case that
- (a)  $x, y$  are both less than 2
  - (b)  $x, y$  are both positive
  - (c) at least one of  $x$  and  $y$  is positive
  - (d) at least one of  $x$  and  $y$  is less than 2
- A2.** Let  $x, y$  and  $z$  be arbitrary real numbers. Then we must have
- (a) if  $x > y$ , then  $x \cdot z > y \cdot z$
  - (b) if  $x > y$ , then  $x - z > y - z$
  - (c) if  $x > y$ , then  $x/z > y/z$
  - (d) if  $x > y$ , then  $1/x > 1/y$
- A3.** Suppose  $n$  observations of a variable yield  $n$  different values with median  $m$ . Suppose the observations with the maximum value and the minimum value are omitted. The median of the remaining  $n-2$  observations is
- (a)  $> m$
  - (b)  $\leq m$
  - (c)  $< m$
  - (d) None of the above

- A26.** Suppose the utility function of a person is  $U(x, y) = 16x + 13y$ , where  $x$  and  $y$  are the quantities consumed of two commodities  $X$  and  $Y$ . If the unit price of  $X$  is Rs 13 and the unit price of  $Y$  is Rs 11, in equilibrium the household will choose a commodity bundle
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- A30.** Which of the following constitutional amendments deals with the Panchayati Raj Institutions?
- (a) 43rd Amendment
  - (b) 73rd Amendment
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- A12.** The long-run cost function for a commodity sold in a perfectly competitive market is given by  $C(q) = q^3 - 2q^2 + 2q$ . The equilibrium price of the commodity in the long run is
- (a) 4
  - (b) 2
  - (c) 1
  - (d) 1/2
- A13.** Suppose a monopolist firm faces a demand curve given by  $D(p) = 1 - p$ , where  $p$  is the unit price of the firm's product in rupees. If the firm's output in short-run equilibrium is 0.1 unit, what is the marginal cost of the firm at the equilibrium level of output?
- (a) 0.8
  - (b) 0.9
  - (c) 1.0
  - (d) 1.1
- A14.** Suppose that the nominal interest rate of an economy is 10 percent, the inflation rate 5 percent, and the tax rate from interest income 40 percent. The after-tax real rate of interest will be
- (a) 1 percent
  - (b) 2 percent
  - (c) 3 percent
  - (d) None of the above
- A15.** Mr. A uses his salary of Rs 2 lakhs of a month to buy AT&T shares to earn dividend. Mr. B borrows Rs 2 lakhs from the bank to buy a new machine to expand his business. Mr. C deposits his salary of Rs 2 lakhs of a month in a term deposit bank account to earn long-term interest. In macroeconomics, the actions of A, B and C will be characterized as
- (a) A : investment, B : investment, C : saving
  - (b) A : investment, B : investment, C : investment
  - (c) A : saving, B : investment, C : saving
  - (d) A : investment, B : saving, C : investment

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  - (b) A : investment, B : investment, C : investment
  - (c) A : saving, B : investment, C : saving
  - (d) A : investment, B : saving, C : investment

- A16.** If the excess of private sector savings over investment in a year in an economy increases by Rs 700 crores, the net savings of the government sector in a year decreases by Rs 850 crores and the annual value of imports of goods and services increases by Rs 600 crores, what is the change in the annual value of exports of goods and services in the economy?
- (a) Increases by Rs 450 crores
  - (b) Increases by Rs 750 crores
  - (c) Decreases by Rs 450 crores
  - (d) Decreases by Rs 750 crores
- A17.** Suppose Japanese shareholders own 49% and Indian shareholders 51% of the shares of a firm producing automobiles in India. The profits earned by Japanese shareholders of the firm form
- (a) part of Indian GDP and part of Japanese GNP
  - (b) part of Indian GDP and part of Indian GNP
  - (c) part of Indian GNP and part of Japanese GNP
  - (d) None of the above
- A18.** In the IS-LM model of an economy, if the economy is in a liquidity trap and aggregate investment expenditure is unaffected by current income, a rise in government expenditure (other things remaining constant) would lead to a rise in the equilibrium value of
- (a) the demand for money
  - (b) the rate of interest
  - (c) aggregate savings
  - (d) aggregate investment

**A22.** Consider a closed controlled economy with unlimited supplies of labour in which the incremental capital-output ratio is 4 and the rate of population growth is 1.5% per annum. If the economy wants to attain a growth rate of per capita income of 6% per annum, what must be the savings rate (in percent) in the economy?

- (a) 24
- (b) 27.5
- (c) 30
- (d) 36

**A23.** Which of these is used in calculating the human development index?

- (a) Level of income measured by per capita GDP
- (b) Educational attainment measured by literacy and school attendance
- (c) Condition of health measured by life expectancy
- (d) All of the above

**A24.** In 2006-07, the National Rural Employment Guarantee Programme entitled

- (a) 100 days of employment to all rural families in 200 districts of India
- (b) 100 days of employment to all adults in 200 districts of India
- (c) 100 days of employment to all rural families in India
- (d) 100 days of employment to all adults in India

**A25.** Savings rate in India is

- (a) about 10 percent
- (b) about 30 percent
- (c) about 50 percent
- (d) about 70 percent

**A19.** In an economy where all commodities are produced with labour alone, 0.5 unit of labour is required to produce a unit of commodity A and 1.0 unit of labour is required to produce a unit of commodity B. If the international price of B is 2.5 units of A (and unaffected by how much the economy trades), and if the total amount of labour in the economy is 100 units, how much of the commodities will the economy produce?

- (a) 200 units of A, 0 unit of B
- (b) 57.14 units of A, 71.04 units of B
- (c) 57.14 units of B, 71.04 units of A
- (d) 0 unit of A, 100 units of B

**A20.** Which of the following is true for the government budget?

- (a) The revenue deficit is always less than the budget deficit
- (b) The revenue deficit is always less than or equal to the budget deficit
- (c) The revenue deficit is always greater than or equal to the budget deficit
- (d) None of the above

**A21.** The Value Added Tax is

- (a) a direct tax
- (b) an indirect tax
- (c) a partly direct and partly indirect tax
- (d) a new type of tax, neither direct nor indirect

**SECTION—B**

Answer any nine questions. Each question carries 5 marks

- B1.** Sketch a graph of the function  $y = f(x) = \log_e x$  in the interval  $[1, 2]$ . Find the value of  $z > 0$  such that  $f'(z) = \log_e 2$  (the prime denotes a derivative, as usual). Prove that  $z$  is in the interval  $[1, 2]$ .
- B2.** (a) Suppose Rs 1,00,000 is deposited in an account for 3 years at 11% rate of interest per year, compounded annually. How much money would be there at the end of 3 years?  
 (b) Suppose that the market rate of interest is 11% per annum. Which of the following two options would you prefer?  
 Option I : You receive Rs 111 after one year.  
 Option II : You receive Rs 55 after six months and Rs 55 after one year.
- B3.** A computer has two processors. The probability that processor one works is  $3/4$  and the probability that processor two works is  $7/8$ . The computer will function if processor one works, or processor two works or both processors work. Find the probability that processor one is working, given that the computer is functional.
- B4.** Let  $X$  be a random variable denoting the prison sentence (in years) for people convicted of car theft. Suppose that the maximum sentence for stealing a car is three years and that the probability density function of  $X$  is given by  $f(x) = (1/9)x^2$ . What is the expected prison sentence on being convicted for stealing a car?
- B5.** Let a consumer purchase the bundle  $Q^0 = (q_1^0, \dots, q_n^0)$  at prices  $p^0 = (p_1^0, \dots, p_n^0)$  and the bundle  $Q^1 = (q_1^1, \dots, q_n^1)$  at prices  $p^1 = (p_1^1, \dots, p_n^1)$ . The following price index numbers may be defined :

$$P_L \text{ (Laspeyre)} = \frac{\sum_j p_j^1 q_j^0}{\sum_j p_j^0 q_j^0}; \quad P_p \text{ (Paasche)} = \frac{\sum_j p_j^1 q_j^1}{\sum_j p_j^0 q_j^1}$$

Let

$$Y = \frac{\sum_j p_j^1 q_j^1}{\sum_j p_j^0 q_j^0}$$

Now show that—

- (a) if  $Y > P_L$ , then the consumer is no-worse off at  $(p^1, Q^1)$ ;  
 (b) if  $Y < P_p$ , then the consumer is no-better off at  $(p^1, Q^1)$ .

**B6.** In a competitive market, the demand and supply curves of a product are given by  $q^d = 200 - p$  and  $q^s = (1/2)p - 25$ . There is an imposition of commodity tax of 30 per unit on the output. Calculate the pre-tax and the post-tax equilibrium price and output. Also find out the incidence of tax burden on consumer and producer per unit of output.

**B7.** Suppose there are 4 alternatives,  $x$ ,  $y$ ,  $z$  and  $w$ . Further suppose that there are 7 individuals, 1, 2, 3, 4, 5, 6 and 7. The individuals' rankings (orderings) of the four alternatives,  $R_i, i = 1, \dots, 7$  are given by

$$R_1 : (xy)zw$$

$$R_2 : yzwx$$

$$R_3 : zw(xy)$$

$$R_4 : (xy)(zw)$$

$$R_5 : yzwx$$

$$R_6 : zw(xy)$$

$$R_7 : (xy)(zw)$$

Determine which of the alternatives are Pareto-optimal. Explain your answer.

[Notation : Alternatives inside the parentheses are indifferent to each other. If an alternative is written to the left of another alternative, then the former is preferred to the latter.]

**B8.** Suppose the money demand function of an economy is

$$\frac{M^d}{P} = 1000 - 100r$$

where  $M^d$  is the quantity of money demanded,  $P$  denotes the price level and  $r$  the rate of interest (in percentage). Let  $M$  denote the exogenously determined quantity of money in circulation.

- Find the equilibrium interest rate if  $M = 1000, P = 2$ .
- What happens to the equilibrium interest rate if the supply of money is raised from 1000 to 1200?
- If the Central Bank of the economy wants to raise the interest rate to 7 percent, what money supply should it set?

**B9.** In an economy where 20 percent of income is taxed, consumption is 75 percent of post-tax income. If the level of investment is 500 and government expenditure is 1100, then—

- what is the level of income;
- what is the budget deficit;
- what will be the level of income when with unchanged investment and tax-rate, government expenditure is such that the budget is balanced?

- B10.** Assume that the cost of a bottle of mineral water in India and the US reflects the relative cost of living in the two countries and increases at the same rate as the cost of living in the respective countries. The price of a bottle of mineral water in 2000 is reported as being Rs 30 in India and \$2 in the US. The exchange rate of the rupee in that year is reported to have averaged Rs 45 to the dollar. The inflation in the cost of living between 1991 and 2000 was 33.3 percent in the US and 50 percent in India. The exchange rate of the rupee in 1991 was Rs 20 to the dollar.

Would it be right to say that since the total inflation in the US during the decade was much lower than in India, a person regularly travelling from India to the US would find that country relatively less expensive to visit in 2000 as compared with 1991? Explain your answer.

- B11.** Consider an economy where the balance of payments in a particular year is characterised by the following (million dollars) :

Current Account Balance = -400  
Capital Exports = 700  
Imports = 800  
Change in Reserves = -100  
Net Invisible Receipts = 100

- (a) What is the value of exports from this economy?  
(b) What is the value of capital inflow into the economy?

**SECTION—C**

Answer any two questions. Each question carries 10 marks

- C1.** A person consumes two goods  $x$  and  $y$ , and uses the utility function  $U(x, y) = x + y$  to rank alternatives; it is given that the person's income is Rs 100 per week and that the price of good  $y$  is Rs 2 per unit. Compute the demand curve for good  $x$  under these conditions.



**C2.** Consider a closed macroeconomy of a year as described by the following equations and values :

$$Y = C + I + G$$

$$C = 250 + 0.75(Y - T)$$

$$I = 1000 - 50r$$

$Y$  = National Income

$C$  = Private Consumption Expenditure

$T$  = Total Lump-sum Tax from Income = 1000

$G$  = Government Consumption Expenditure = 1000

$I$  = Investment Expenditure

$r$  = Rate of Interest (in percentage)

- (a) If in equilibrium,  $Y = 5000$ , compute the equilibrium levels of private savings, public savings, total savings and the interest rate in the given economy.
- (b) Derive the equation for the product market equilibrium locus of  $Y$  and  $r$  (the  $I-S$  curve) for the given economy.
- (c) How would your answers in (a) and (b) change if  $G$  was equal to 1250?

**C3.** There are four candidates for a scholarship :  $A$ ,  $B$ ,  $C$  and  $D$ .

- (i) Only one of the four candidates had first division both in Class X and Class XII.
- (ii) Only one candidate had first division both in Class X and B.A.
- (iii) Only one candidate had first division both in Class X and M.A.
- (iv) Only one candidate had first division both in Class XII and B.A.
- (v) Only one candidate had first division both in Class XII and M.A.
- (vi) Only one candidate had first division both in B.A. and M.A.
- (vii) Both  $A$  and  $B$  had first division in Class X.
- (viii) Both  $C$  and  $D$  had first division in Class XII.
- (ix) Both  $B$  and  $C$  had first division in B.A.
- (x)  $D$  had a first division in M.A.

The scholarship was awarded to the candidate who had first division in more examinations than any other. Which candidate was awarded the scholarship? Explain your answer.

C4. You are given the following information about the Indian Economy :

Year	Share of sector in GDP (percent)			Share of sector in workforce (percent)		
	Agriculture	Manufacturing	Services	Agriculture	Manufacturing	Services
1990	35	33	32	70	15	15
2005	20	32	48	66	12	22

- Which sector registered the highest productivity (output per worker) in 1990 and which showed the lowest?
- In what direction—rise, fall, or neither—did productivity change in these sectors over the period 1990 to 2005, and what change, if any, is seen in the ranking of the sectors by productivity comparing 2005 with 1990?
- Explain the economic reasons for the observed trends in output, employment and productivity.

**SECTION—D**

Answer all the questions of D1. This section carries 10 marks

**D1.** "It is true, that, when an individual saves he increases his own wealth. But the conclusion that he also increases aggregate wealth fails to allow for the possibility that an act of individual saving may react on someone else's savings and hence on someone else's wealth... For although the amount of his own saving is unlikely to have any significant influence on his own income, the reactions of the amount of his consumption on the incomes of others makes it impossible for all individuals simultaneously to save any given sums. Every such attempt to save more by reducing consumption will so affect incomes that the attempt necessarily defeats itself. It is, of course, just as impossible for the community as a whole to save less than the amount of current investment, since the attempt to do so will necessarily raise incomes to a level at which the sums which individuals choose to save add up to a figure exactly equal to the amount of investment." (J. M. Keynes)

On the basis of the above passage, answer the following questions :

- Can an individual increase his wealth by saving more?
- Can an individual increase aggregate wealth by saving more? Explain your answer in not more than two sentences of your own.
- What happens when the community as a whole decides to save less than the current investment?
- Does an individual's decision to save more affect his own income?
- Can all individuals end up with a higher aggregate saving by deciding simultaneously to consume less and save more?
- Can all individuals end up with a lower aggregate saving by deciding simultaneously to consume more and save less?