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Name…….

Roll No……..

Date: 10.06.2015

# SHREE GURU KRIPA'S INSTITUTE OF MANAGEMENT

## MODEL EXAM - 3

## CPT – ECONOMICS & MATHS

**Total Marks:** 100 **Time:** 2 hours

**Total No. of Questions:** 100 **No. of Printed pages:** 8

1. Which of the following statements is incorrect
   (a) Unlike normative economics, positive economics is based on objective analysis of economic issues
   (b) Micro economics emphasizes interactions in the economy as a whole
   (c) The opportunity cost of a good is the quantity of other goods sacrificied to get another unit of that good
   (d) None of the above.

2. With the same amount of resources, a farmer can feed the following combinations of goats and horses

| | **Goats** | **horses** |
|---|---|---|
| **Option I** | 168 | 44 |
| **Option II** | 150 | 50 |

   Give the option available with him, what is the opportunity cost to the farmer of feeding one horse?
   (a) 3 goats
   (b) 1 goat
   (c) 3 horses
   (d) 18 goats

3. A drought in India leads to unusually low level of wheat production. This would lead to a rise in the price of wheat and fall in the quantity of wheat demanded due to:
   (a) Excess demand at the original price
   (b) Excess supply at the original price
   (c) the supply curve shifting to the right
   (d) the demand curve shifting to the left

4. Consumer surplus is the area
   (a) above the supply curve and above the price
   (b) above the demand curve and below the price
   (c) below the demand curve and above the price
   (d) below the supply curve and above the price

5. If a fisherman must sell all of his daily catch before it spoils for whatever price he is offered, once the fish are caught the fisherman's price elasticity of supply for fresh fish is
   (a) Infinite
   (b) One
   (c) Two
   (d) Zero

6. Elasticity generated from water is called
   (a) Hydel electricity
   (b) Thermal electricity
   (c) Atomic energy
   (d) Tidal energy

**Use this information for below 4 qns**

Nicole owns a small pottery factory. She can make 1,000 pieces of pottery per year and sell them for Rs.100 each. It costs Nicole Rs.20,000 for the raw materials to produce the 1,000 pieces of pottery. She has invested Rs.1,00,000 in her factory and equipment: Rs.50,000 from her savings and Rs.50,000 borrowed at 10%.(Assume that she could have loaned her money out at 10% too). Nicole can work at a competing pottery factory for Rs.40,000 per year.

7. The accounting cost at Nicole's factory is:
   (a) Rs.50,000
   (b) Rs.80,000
   (c) Rs.75,000
   (d) Rs.25,000

8. The economic cost of Nicole's factory is:
   (a) Rs.50,000
   (b) Rs.80,000
   (c) Rs.75,000
   (d) Rs.70,000

9. The accounting profit at Nicole's factory is:
   (a) Rs.75,000
   (b) Rs.80,000
   (c) Rs.30,000
   (d) Rs.50,000

10. The economic profit at Nicole's factory is:
    (a) Rs.50,000
    (b) Rs.85,000
    (c) Rs.75,000
    (d) Rs.30,000

11. A buyer's willingness to pay is that buyer's:
    (a) minimum amount he is willing to pay for a good
    (b) producer surplus
    (c) consumer surplus
    (d) maximum amount he is willing to pay for a good

12. Agriculture faces the problem of
    (a)overdose of fertilizers
    (b) over irrigation
    (c) slow and uneven growth
    (d) very few people engaged in it

13. ICICI bank is a:
    (a) central bank
    (b) nationalized bank
    (c) rural regional bank
    (d) Private Commercial Bank

14. If 4 farmers can do a field job which is being done by 6 farmers this means there is:
    (a) frictional unemployment
    (b) seasonal unemployment
    (c) voluntary unemployment
    (d) Disguised unemployment

15. Price theory is an important constituent of ___ economics
    (a) Micro
    (b) Macro
    (c) Development
    (d) welfare

16. Inductive method is ___ based on the observation of particular facts.
    (a) never
    (b) seldomly
    (c) always
    (d) alternatively

17. The law of consumer surplus is based on:
(a) indifference curve analysis
(b) the law of diminishing marginal utility
(C) law of substitution
(d) revealed preference theory

18. In terms of generation of power____'s contribution is the maximum:
(a) thermal
(b) hydel
(c) nuclear
(d) others

19. Which of the following statement is correct?
(a) robbins has made economics as a form of welfare economics
(b) all capital is wealth but all wealth is not capital
(c) the law of demand is always true
(d) None

20. If the price of X rises by 10 % and quantity demanded falls by 10%. X has
(a) Inelastic demand
(b) Elastic demand
(c) Zero elastic demand
(d) Unit elastic demand

21. Which of the following statement is correct?
(a) Income tax was abolished in year 1991
(b) Except for Punjab, all states have adopted VAT
(c) Gift tax abolished in India in 1998
(d) Estate duty was abolished in 1995

22. Which of the following is not a characteristic of a "Price Taker:?
(a) TR = P X Q
(b) Negatively sloped demand curve
(c) AR = Price
(d) Marginal revenue = Price

23. India has the largest technical and scientific manpower in the world
(a) Tenth
(b) Third
(c) Fourth
(d) Fifth

24. Per capital national income means
(a) Population/ NNP (b) Total capital/NNP
(c) NNP/ Population (d) None

25. NTPC stands for
(a) National Tidal Power Corporation
(b) National Theological Power Corporation
(c) National Thermal Power Corporation
(d) National Talent Potential Corporation

26. Capital intensive technique would get chosen in a
(a) Capital surplus economy
(b) labour surplus economy
(c) developed economy
(d) developing economy

27. Which of the following is the best general definition of study of economics
(a) Inflation and unemployment in a growing economy
(b) Business decision making in an foreign competition
(c) Individual and social choice in the face of scarcity
(d) the best way to invest in the stock market

28. In describing a given production technology, the short run is best described as lasting:
(a)Upto 6 months from now
(b) Upto 5 years from now
(c) As long as at least one input is fixed
(d) As long as all inputs are fixed

29. Which of the following statements is incorrect?
(a) Workers employed in sugar millsx face seasonal unemployment
(b) Due to introduction of new machinery, labour saving device etc. some workers tend to be replaced by machine is termed as structural unemployment
(c) Frictional unemployment is temporary phenomenon
(d) Disguised unemployment refers to a situation where removal of some workers will not affect the volume of total output.

30. Energy obtained from Radioactive Elements is called
(a) Thermal–Electricity
(b) Hydro–Electricity
(c) Atomic Energy
(d) Non–Commercial Energy

**Use this information for below 3 qns**

The following data gives the production possibilities of an economy that produces two types of goods, guns and bread.

| Production Possibility | Guns | Bread |
|---|---|---|
| A | 0 | 105 |
| B | 10 | 100 |
| C | 20 | 90 |
| D | 30 | 75 |
| E | 40 | 55 |
| F | 50 | 30 |
| G | 60 | 0 |
| H | 30 | 45 |

31. The opportunity cost of increasing gun's production from 20 to 30 units is equal to
(a) 10 units of bread
(b) 25 units of bread
(c) 15 units of bread
(d) 24 units of bread

32. One moves successively from point A to point B, C, D, E and F the opportunity cost of guns
(a) Increases as more of guns are produced
(b) Decreases as more of guns are produced
(c) Remains constant
(d) none

33. Point D is efficient while point H (30 guns and 45 loaves of bread) is inefficient. Why?
    (a) Point D is outside PPF while point H is on PPF
    (b) Point D is inside PPF while point H is on PPF
    (c) Point D is on PPF while point H is inside PPF
    (d) None

34. What is Disinvestment?
    (a) It refers to the disposal of Public Sectors equity in the market
    (b) It refers to the transfer of assets from private to public ownership
    (c) It means integrating the domestic economy with the world economy
    (d) None

**Use this information for below 2 qns**

| Hrs of labour | **Total output** | **Marginal output** |
|---|---|---|
| **0** | - | - |
| **1** | 350 | 350 |
| **2** | - | 230 |
| **3** | 670 | - |

35. What is the total output when 2 hrs of labour are employed
    (a) 500
    (b) 580
    (c) 600
    (d) 680

36. What is the marginal product if the third hour of labour is employed
    (a) 110
    (b) 120
    (c) 100
    (d) 90

37. Structural unemployment is due to
    (a) A change caused by the introduction of new machines, labour saving devices and improvement in methods of production
    (b) A change caused by recessionary and depressionary phases of the economy
    (c) A change caused by a decline in demand for production in particular industry and consequence disinvestments and reduction in its manpower requirement
    (d) A change caused by high population growth

38. If as a result of a change in p0rice, the quantity supplied of good remains unchanged, we conclude that
    (a) Elasticity of supply is perfectly elastic
    (b) Elasticity of supply is perfectly inelastic
    (c) Elasticity of supply is relatively elastic
    (d) Elasticity of supply is inelastic

39. The Govt. established ___ in 1982 to finance rural projects at lower rate of interests
    (a) Regional Rural Bank
    (b) RBI
    (c) National bank for Agricultural and Rural Development
    (d) Co-operative banks

40. If all inputs are trebled and the resultant output is doubled, this is a case of:
    (a) Constant returns to scale
    (b) Diminishing returns to scale
    (c) Increasing returns to scale
    (d) Negative returns to scale

41. Price discrimination is not possible in case of
    (a) Monopoly competition
    (b) Monopolistic competition
    (c) Perfect competition
    (d) None

42. In case RBI wants to increase rate of interest then it should:
    (a) Buy securities
    (b) Sell securities
    (c) hold securities
    (d) None of the above

43. The CRR is determined by:
    (a) Free play of market forces
    (b) Commercial banks
    (c) Monetary authority
    (d) None

44. A firm encounters its shut down point when:
    (a) Average cost equals price at the profit maximizing level of output
    (b) Average fixed cost equals price at the profit maximizing level of output
    (c) Average variable cost equals price at the profit maximizing level of output
    (d) None

45. Liberalisation process in India was initiated by:
    (a) Yashwant Singh
    (b) Manmohan Singh
    (c) Jaswanth singh
    (d) Both (a) & (b)

46. By imperfect monopoly we mean
    (a) It is possible to substitute the monopolized product with another monopolized product
    (b) Entry of new firms is possible to produce the same product
    (c) The amount of output produced is very small
    (d) None

47. Differentiated oligopoly is one where there are
    (a) Many sellers producing homogeneous product
    (b) Few sellers producing homogeneous product
    (c) Many sellers producing differentiated product
    (d) Few sellers producing differentiated product

48. Which among the following is the drawback of consumer surplus (as explained in marginal utility analysis)?
(a) It is highly hypothetical and imaginary
(b) it ignores the interdependence between the goods
(c) It cannot be measured in terms of money because marginal utility of money changes
(d) All of the above

49. Density of population indicates the
(a) Capital- and ratio
(b) Land – output ratio
(c) the number of person per square kilometre
(d) Land – labour ratio

50. The share of agriculture in India's National Income has ____ over the years
(a) Decreased
(b) Increased
(c) Remains constant
(d) First decreased and then increased

51. A Dealer mixes Tea costing ₹ 6.92 per kg with Tea costing ₹ 7.77 per kg and sells the mixture at ₹ 8.80 per kg and earns a profit 17.5% on his Sale Price. In what proportion does he mix them?
(a) 1:2
(b) 4:1
(c) 3:4
(d) 5:3

52. If $\sqrt[3]{a}+\sqrt[3]{b}+\sqrt[3]{c}=0$, then find the value of $\left[\frac{a+b+c}{3}\right]^3$ =
(a) 9abc
(b) $\frac{1}{9abc}$
(c) abc
(d) $\frac{1}{abc}$

53. Find the value of $[\log_y{}^x.\log_z{}^y.\log_x{}^z]^3$ =
(a) 0
(b) – 1
(c) 1
(d) 3

54. If $\log\frac{x+y}{5}=\frac{1}{2}(\log x+\log y)$, then $\frac{x}{y}+\frac{y}{x}$ =
(a) 20
(b) 23
(c) 22
(d) 21

55. Solve for x, y and z: $\frac{1}{x}+\frac{1}{y}+\frac{1}{z}=5$, $\frac{2}{x}-\frac{3}{y}-\frac{4}{z}=-11$, $\frac{3}{x}+\frac{2}{y}-\frac{1}{z}=-6$
(a) $x=\frac{1}{2}, y=-\frac{1}{3}, z=\frac{1}{6}$
(b) $x=\frac{1}{2}, y=-\frac{3}{5}, z=\frac{2}{5}$
(c) $x=\frac{4}{5}, y=-\frac{2}{5}, z=\frac{1}{6}$
(d) $x=-\frac{1}{2}, y=\frac{1}{3}, z=-\frac{1}{6}$

56. If $\alpha$ and $\beta$ be the roots of $x^2+7x+12=0$, find the equation whose roots are $(\alpha+\beta)^2$ and $(\alpha-\beta)^2$.
(a) $x^2-40x+49=0$
(b) $x^2-35x+39=0$
(c) $x^2-50x+49=0$
(d) $x^2-40x-49=0$

57. One student is asked to divide a half of a number by 6 and other half by 4 and then to add the two quantities. Instead of doing so the student divides the given number by 5. If the answer is 4 short of the correct answer then the actual answer is –
(a) 320
(b) 400
(c) 480
(d) None of these

58. When an inequation is multiplied or divide by same negative number, inequation —direction.
(a) Changes
(b) Does Not Change
(c) Either (a) or (b)
(d) Neither (a) or (b)

59. A sum of money doubles itself in 25 years. The number of years it would trebles itself is –
(a) 50 years.
(b) 37.5 years.
(c) 75 years.
(d) None of these.

60. Determine the compound interest on ₹1,000 at 6% compounded semi–annually for 6 yrs. Given that $(1+i)^n$= 1.42576 for I = 3% and n = 12.
(a) ₹425.76
(b) ₹445.26
(c) ₹520.40
(d) ₹260.20

61. Ram is confused whether to invest at 9% p.a. compounded monthly or 9.25% p.a. SI. Given that $(1+0.0075)^{12}$ = 1.09380690. He decided to find effective rate of interest which is –
(a) 9%
(b) 9.25%
(c) 9.38%
(d) None of these

62. A machine worth ₹4,90,740 is depreciated at 15% of its opening value each year. When its value would reduce to ₹2,00,000?
(a) 4 years 6 months
(b) 5 years 7 months (approx.)
(c) 4 years 5 months
(d) None

63. The number of words which can be formed with 2 different consonants and 1 vowel out of 7 different consonants and 3 different vowels the vowel to lie between 2 consonants is –
(a) 3×7×6
(b) 2×3×7×6
(c) 2×3×7
(d) None

64. The total number of numbers less than 1,000 and divisible by 5 formed with 0, 1, 2, …..9 such that each digit does not occur more than once in each number is
(a) 150
(b) 152
(c) 154
(d) None

65. A committee of 7 members is to be chosen from 6 Chartered Accountants, 4 Economist and 6 Cost Accountants. In how many ways can this be done if in the committee, there must be at least one member from each group and at least 3 Chartered Accountants
(a) 3,450
(b) 3,570
(c) 3,690
(d) 3,200

66. The number of ways in which 15 mangoes can be equally divided among 3 students is –
(a) $\underline{|15}$ / $\underline{|(5)}^4$
(b) $\underline{|15}$ / $\underline{|(5)}^3$
(c) $\underline{|15}$ / $\underline{|(5)}^2$
(d) None

67. If the terms 2x, (x+10) and (3x+2) be in AP, the value of x is…
(a) 7
(b) 10
(c) 6
(d) None of these

68. In an A.P. if $S_n = 3n^2 - n$ and its common difference is '6', then the First term is
(a) 2
(b) 3
(c) 4
(d) 6

69. If the A.M. and G.M. of two observations are 5 and 4 respectively, then the two observations are
(a) 8, 2
(b) 7, 3
(c) 6, 4
(d) 5, 5

70. The sum of n terms of the series 1.4+3.7+5.10+… is
(a) $\left(\frac{n}{2}\right)\left(4n^2+5n-1\right)$
(b) $\left(\frac{n}{2}\right)\left(5n^2+4n-1\right)$
(c) $\left(\frac{n}{2}\right)\left(4n^2+5n+1\right)$
(d) None

71. The value of $1^3+2^3+3^3+\ldots\ldots m^3$ is equal to
(a) $\left[\frac{m(m+1)}{2}\right]^3$
(b) $\frac{m(m+1)(2m+1)}{6}$
(c) $\left[\frac{m(m+1)}{2}\right]^2$
(d) None

72. If $f(x)=x^2-x$ then $f(h+1)$ is equal to
(a) f(h)
(b) f(–h)
(c) f(–h+1)
(d) None of these

73. "has the same father as"…… over the set of children
(a) Reflexive
(b) Symmetric
(c) Transitive
(d) Equivalence

74. The function f (x) = $\frac{1}{x+6}$ is discontinuous at
(a) x = –6
(b) x = 6
(c) x = 0
(d) x = 1 / 6

75. If $x^y y^x = M$, M is constant then $\frac{dy}{dx}$ is equal to
(a) $\frac{-y}{x}$
(b) $\frac{-y(y+x\log y)}{x(y\log x+x)}$
(c) $\frac{y+x\log y}{y\log x+x}$
(d) None of these

76. Value of $\int \frac{dx}{16 - 9x^2}$

(a) $\frac{1}{24}\log\left|\frac{4+3x}{4-3x}\right| + c$

(b) $\frac{16}{9}\log\left|\frac{4+x}{4-x}\right| + c$

(c) $\frac{1}{4}\log\left|\frac{3x}{4}\right| + c$

(d) $\log\left|\frac{4+3x}{4-3x}\right| + c$

77. Evaluate $\int e^x(x^3 + 3x^2)\, dx$

(a) $e^x + 3x + c$

(b) $e^{3x} + 3x + c$

(c) $e^x.x^3 + c$

(d) $e^{3x} + 3x + x^3 + c$

78. Multiple axis line chart is considered when

(a) There is more than one time series q

(b) The units of the variables are different

(c) (a) or (b)

(d) (a) and (b)

79. Find out the missing frequency from the following data, if the median mark is 23.

| Marks | No. of Students |
|---|---|
| 0 – 10 | 5 |
| 10 – 20 | 8 |
| 20 – 30 | ? |
| 30 – 40 | 6 |
| 40 – 50 | 3 |

(a) 15
(b) 21
(c) 10
(d) 26

80. The third quartile and 65th percentile for the following data are

| Profits in '000 ₹ | No. of firms |
|---|---|
| Less than 10 | 5 |
| 10–19 | 18 |
| 20–29 | 38 |
| 30–39 | 20 |
| 40–49 | 9 |
| 50–59 | 2 |

(a) ₹ 33500 and ₹ 29184
(b) ₹ 33000 and ₹ 28680
(c) ₹ 33600 and ₹ 29000
(d) ₹ 33250 and ₹ 29250

81. A Pie Diagram used to represent the following data –

| Source | Customers | Excise | Income Tax | Wealth Tax |
|---|---|---|---|---|
| Revenue in millions | 120 | 180 | 240 | 180 |

The Central Angles corresponding to Income Tax and Wealth Tax –

(a) $(120^0, 90^0)$
(b) $120^0, 90^0$
(c) $60^0, 120^0$
(d) $90^0, 60^0$

82. Find out the missing frequency from the following data, if the median mark is 23.

| Marks | No. of Students |
|---|---|
| 0 – 10 | 5 |
| 10 – 20 | 8 |
| 20 – 30 | ? |
| 30 – 40 | 6 |
| 40 – 50 | 3 |

(a) 15
(b) 21
(c) 10
(d) 26

83. What will be the probable value of meandeviation? when 3 Q =40 and 1 Q =15

(a) 17.50
(b) 18.75
(c) 15.00
(d) None of the above

84. If u + 5x = 6 and 3y – 7v = 20 and the correlation coefficient between x and y is 0.58 then what would be the correlation coefficient between u and v?

(a) 0.58
(b) –0.58
(c) –0.84
(d) 0.84

85. The regression lines are identical if r is equal to–

(a) +1
(b) –1
(c) + 1 or – 1
(d) 0

86. If the regression coefficient of y on x, the coefficient of correlation between x and y and variance of y are –3/4, –√3/2 and 4 respectively, what is the variance of x?

(a) 2/√3/2
(b) 16/3
(c) 4/3
(d) 4

87. For two events A and B, P(B) = 0.3, P(A but not B) = 0.4 and P(not A) = 0.6. The events A and B are
(a) Exhaustive
(b) Independent
(c) Equally likely
(d) Mutually exclusive

88. If a card is drawn at random form a pack of 52 cards, what is the chance of getting a Spade or an ace?
(a) 4/13
(b) 5/13
(c) 0.25
(d) 0.20

89. In a group of 20 males and 15 females, 12 males and 8 females are service holders. What is the probability that a person selected at random from the group is a service holder given that the selected person is a male?
(a) 0.20
(b) 0.30
(c) 0.60
(d) 0.75

90. The Integral of the probability density function $\int_{-\infty}^{+\infty} f(x)dx$ is equal to –
(a) Unity
(b) Infinity
(c) Finity
(d) Zero.

91. A Player tosses 3 coins. He wins ₹ 5 if 3 heads appear, ₹ 3 if two heads appear, ₹ 1 if one head appear. Find his expected Gain in ₹ _____.
(a) 0.5
(b) 0.25
(c) 0.2
(d) None

92. If x is a binomial variate with parameter 15 and 1/3, what is the value of mode of the distribution?
(a) 5 and 6
(b) 5
(c) 5.50
(d) 6

93. In a sample of 500 workers of a factory, the mean wage and SD of wages are found to be ₹ 500 and ₹ 48 respectively. Find the number of workers having wages more than ₹ 600, less than ₹ 450, between ₹ 548 and ₹ 600.
(a) 45, 85, and 90
(b) 20, 65, and 70
(c) 9, 75, and 70.
(d) None of these.

94. The distribution of wages of a group of workers is known to be normal with mean ₹ 500 and SD ₹ 100. If the wages of 100 workers in the group are less than ₹ 430, what is the total number of workers in the group?
(a) 289
(b) 413
(c) 568
(d) 318

95. If X and Y are two independent random variables such that $X \approx \chi^2 m$ and $Y \approx \chi^2 n$, then the distribution (X+Y) is
(a) Normal
(b) Standard normal
(c) T
(d) Chi–square

96. The —— the size of the sample more reliable is the result
(a) Medium
(b) Smaller
(c) Larger
(d) None

97. The mean of the sampling distribution of sample proportion is —— the population proportion.
(a) Greater than
(b) Less than
(c) Equal to
(d) None

98. For 2 sample values, we have —— degree of freedom
(a) 2
(b) 1
(c) 3
(d) 4

99. From the data given below

| Commodity | Price Relative | Weight |
|---|---|---|
| A | 125 | 5 |
| B | 67 | 2 |
| C | 250 | 3 |

Then the suitable index number is
(a) 150.9
(b) 155.8
(c) 145.8
(d) None of these

100. From the following data

| Group | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Group Index | 120 | 132 | 98 | 115 | 108 | 95 |
| Weight | 6 | 3 | 4 | 2 | 1 | 4 |

The general index I is given by:
(a) 111.30
(b) 113.45
(c) 117.25
(d) 114.75