Entrance Examination, June 2018

M.Phil. /Ph.D. Economics

Time: 2 Hours

Max. Marks: 80

HALL TICKET NUMBER

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Part-A

1. Which of the following hypothetical situations would lend support to the applicability of the Keynesian view over that of the Classical view?
   A. Unemployment rises briefly, but then settles back to a low and stable rate without any government intervention.
   B. Unemployment rises and stays high for a long period of time without any government intervention.
   C. Unemployment decreases briefly, but rises back to a low and stable rate without any government intervention.
   D. Unemployment rises when the government increases its spending.

2. Assume that economy is operating at full employment. If the economy enters a sudden expansion, the quantity of money according to cash balance school available in the economy will:
   A. Increase.
   B. Decrease.
   C. First decrease, then stabilize at a lower level.
   D. Stay the same.

3. In arbitrage theory, given that no-arbitrage condition holds,
   A. A risk-neutral probability measure exists, but the law of one price does not hold.
   B. No risk-neutral probability measure exists, but the law of one price holds.
   C. Neither a risk-neutral probability measure exists, nor the law of one price hold.
   D. A risk-neutral probability measure exists, and the law of one price holds.

4. In consumer theory, consider preferences of an individual to be reflexive, transitive and complete. Let price of each commodity, $p_i > 0$ and let the consumer income, $M > 0$. Then within the budget of the consumer,
   A. There exists a best commodity bundle if preferences are continuous.
   B. There exists a best commodity bundle if preferences are convex.
   C. There exists a best commodity bundle if preferences are locally non-satiated.
   D. There exists a best commodity bundle if preferences are monotonous.

5. Consider a square matrix A of order 9. Let $B = (1/2) (A + A^T)$. Then A is a positive definite matrix, if,
   A. All principal minor determinants of A are greater than zero.
   B. All principal minor determinants of B are greater than zero.
   C. All principal minor determinants of A alternate in sign.
   D. All principal minor determinants of B alternate in sign.

6. The argument, "Some men are immortal. Bhagavaticharan is a man. Therefore Bhagavaticharan is immortal." is invalid because
   A. The conclusion does not follow from the premise
   B. One of the statements in the premise is false
   C. The conclusion is false
   D. Premise is compound statement with two sub-statements.

7. Two fair dice are rolled. Let S = sum of numbers on the two dice after they are rolled. Let m and n be positive integers between 2 and 12 ($2 \leq m, n \leq 12$).
   A. $P(S = m) = P(S = 12 - m)$.
   B. $P(S = m) < P(S = n)$ if $m < n$.
   C. $P(S = m) > P(S = n)$ if $m < n$.
   D. None of the above.

8. If A is an idempotent matrix, then so is?
   A. $(A - I)$.
   B. $(A + I)$.
   C. $(I - A)$.
   D. $-(A + I)$.

9. An estimated regression equation is given by $\hat{Y}_i = -12 + 0.5X_i$. What is the value of the residual at the point X = 50, Y = 70?
   A. 57
   B. -57
   C. 0
   D. 13

10. The Durbin-Watson d statistic value is limited to
    A. 0 to 2
    B. 2 to 4
    C. 0 to 4
    D. 0 to 1

The Pie chart given below shows the expenditure incurred in bringing out a book by a publisher.

Study the Graph and answer the questions 11 and 12 given below:

Expenditure PIE chart
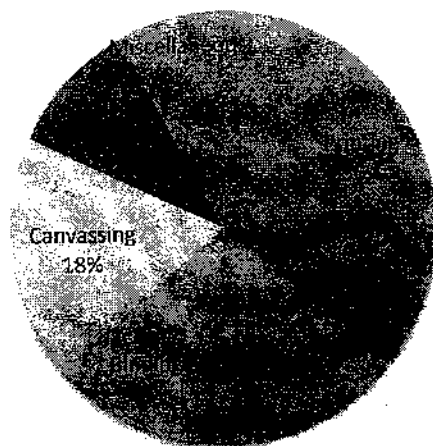
Canvassing
18%

▣ Printing ▩ Paper ▣ Binding ▨ Canvassing ▧ Royalty ▪ Miscellaneous

11. The cost of Printing is Rs.23400, the royalty is
   A. 6500
   B. 2340
   C. 4680
   D. 7840

12. Royalty on the book is less than canvassing expenditure by
   A. 8%
   B. 80%
   C. $44\frac{4}{9}$%
   D. None

Carefully study the table given below showing the number of five types of toys manufactured by a Company during 1982 to 1986 and answer the questions 13-16.

Year	TOYS				
	1st	2nd	3rd	4th	5th
1982	200	150	78	90	65
1983	150	180	100	105	70
1984	180	175	92	110	85
1985	195	160	120	125	75
1986	220	185	130	135	80

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13. What was the percentage (approximate) increase in production of 4th type toys from 1983 to 1985?
  A. 10
  B. 20
  C. 19
  D. 25

14. In the case of which type of toys was the total production of the given five years the maximum?
  A. Third
  B. Second
  C. First
  D. Fourth

15. In the case of which type of toys was there a monotonous increase in production over the years?
  A. Second
  B. First
  C. Third
  D. Fourth

16. The production of 5th type of toy in 1986 was what percentage of production of 2nd type of toy in 1985?
  A. 80
  B. 50
  C. 100
  D. 200

17. Since the mode is the most frequently occurring data value, it
  A. Can never be larger than the mean
  B. Is always larger than the median
  C. Is always larger than the mean
  D. None of the above.

18. Find the number of triangles in the following figure:

  A. 8
  B. 10
  C. 12
  D. 14

19. If p pencils cost c *paise*, how many pencils can be bought for k rupees (assuming that fractional pencils can be bought)?
    A. 100ckp
    B. kp / 100c
    C. 100ck / p
    D. 100kp / c

20. A numerical value used as a summary measure for a sample, such as sample mean is known as a
    A. Population parameter
    B. Sample parameter
    C. Sample statistic
    D. Population mean

21. If with a rise of 10 % in prices and the wages are increased by 20 %, the real wage increase is by
    A. 10%
    B. More than 10%
    C. Less than 10%
    D. 20%

22. A bag contains an equal number of one rupee, 50 *paisa* and 25 *paisa* coins. If the total amount in the bag is Rs. 35, how many coins of each type are there?
    A. 15
    B. 18
    C. 20
    D. 25

23. In 2018-2019 union budget, the fiscal deficit is
    A. 3.1% of GDP
    B. 3.2% of GDP
    C. 3.3% of GDP
    D. None of the above

24. Given the function $y = 9x^8$, integration of y with respect to x is
    A. x^9 + constant
    B. x^8 + constant
    C. 8x + constant
    D. 72x

25. Which is true about the problems of moral hazard and adverse selection in Economics?
    A. Both problems of moral hazard and adverse selection occur due to full information between buyers and sellers
    B. Moral hazard is due to hidden information and adverse selection is due to hidden action
    C. Moral hazard occurs due to hidden action and adverse selection due to hidden information
    D. In both situations of moral hazard and adverse selection, both buyers and sellers gain.

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26. A single employer in a city is buying labour services from large number of workers. This is an example of
    A. Monopsony market
    B. Bilateral monopoly
    C. Natural monopoly
    D. None of the above

27. Which of the following is a true statement?
    A. In general, total profit of firms under cartel is higher than in Cournot Nash equilibrium
    B. In general, total profit of firms under cartel is lower than in Cournot Nash equilibrium
    C. A cartel acts a competitive firm
    D. A cartel is tacit collusion

28. The general relationship among Arithmetic Mean (AM), Geometric Mean (GM) and Harmonic Mean is given by AM ≥ GM ≥ HM. But there can be a relationship of AM = GM = HM, if
    A. The AM is decreasing in value, GM is remaining constant and HM is increasing in value,
    B. All the n observation values are equal
    C. The variance of the variable tends to increase continuously,
    D. None of the above.

29. For the Binomial distribution with parameters n and p, the variance cannot exceed
    A. np/2, where n is the number of trials and p is the probability of success.
    B. np, where n is the number of trials and p is the probability of success.
    C. np/3, where n is the number of trials.
    D. np/4, where n is the number of trials.

30. A study finds that the per capita income of India in 2010 is four times as compared to its value in 1960. This study is
    A. Social
    B. Horizontal
    C. Longitudinal
    D. Factorial

31. A seven year zero coupon bond carries an annual yield of 6.75% and a six year zero coupon bond carries an annual yield of 5.87%. Calculate the one year forward rate 6 years from now (Assume annual compounding rate).
    A. 6.31%
    B. 12.03%
    C. 12.19%
    D. 12.62%

32. A model is
    A. An abstract statement of inter-relationships, usually, but not necessarily mathematical in form
    B. An abstract statement of inter-relationships, usually, and necessarily mathematical in form.
    C. An abstract statement of inter-relationships, usually, and necessarily verbal in form.
    D. An abstract statement of inter-relationships, usually, but not necessarily verbal in form.

33. Research methodology for the economist comprises
    A. Theoretical frame developed
    B. The methods used
    C. The model constructed.
    D. All the above

34. If a researcher has to collect data from illiterate rural population, which tool of data collection is appropriate?
    A. Questionnaire
    B. Focus group discussion
    C. Interview schedule
    D. All the above

35. Sampling frame means
    A. List of sampled units
    B. Size of the sample
    C. List of units in the population
    D. None of the above

36. To know the acceptability of a new product in the market what kind of research is done?
    A. Explanatory
    B. Descriptive
    C. Exploratory
    D. Experimental

37. Official statistics on Unemployment and other characteristics published by Bureau of Labour Statistics is an example of
    A. Explanatory research
    B. Exploratory research
    C. Descriptive research
    D. None of the above

38. Scientific research provides knowledge through
    A. Stylized facts
    B. Empirically verifiable facts
    C. Counterfactuals
    D. All of the above

39. Let S and T be two non-empty disjoint sets of points in R^n. Then S and T can be separated by a hyperplane if,
    A. S and T are open sets.
    B. S and T are closed sets.
    C. S and T are bounded sets.
    D. S and T are convex sets.

40. Consider an estimator $T_n = t(X_1, X_2... X_n)$ based on a random sample of size n for a parameter, θ, for some random variable, X. Let $plim\ T_n = \theta$. Then T_n is said to be:
    A. Efficient.
    B. Unbiased
    C. Sufficient
    D. Consistent.

Part-B

41. Following a recent exchange depreciation, the prices of imported cars increased. The prices of cars produced locally did not change, what is the most likely impact on the CPI and GDP deflator. assuming everything else remains the same:
    A. The CPI and the GDP deflator will both increase
    B. The CPI increases; No change in the GDP deflator
    C. No change in both the CPI and the GDP deflator
    D. No change in the CPI; the GDP deflator can change

42. If aggregate demand increases, what will happen to actual inflation and expected inflation in the short run?
    A. Decrease, decrease
    B. Increase, no change
    C. Increase, decrease
    D. No change, decrease

43. Which one of the following statements is correct?
   A. Inflation targeting is based on the assumption that all elements of the inflation process are under control of the central bank.
   B. Under an inflation-targeting framework there is no limit to the discretionary powers of the central bank.
   C. One of the key aspects of inflation targeting is the impact on inflation expectation.
   D. All the above.

44. India's current debt – GDP ratio is in the range of
   A. 10% to 20%
   B. 20% to 30%
   C. 40% to 50%
   D. 60% to 70%

45. Consider the following statement in Economics:
   "When parties can bargain without any transaction cost, and to their mutual advantages, the resulting outcome will be efficient, regardless of how property rights specified". This statement is related to
   A. Pigouvian tax of negative externality
   B. Marginal social cost (MSC) in externality analysis
   C. Coase Theorem
   D. Market failure theory due to public goods

46. Assume that the wage in the labour market is above equilibrium. According to the Classical view, which of the following will occur?
   A. There will be a deficiency of workers willing to work at the prevailing wage.
   B. There will only be voluntary unemployment at this above-equilibrium wage rate.
   C. The wage rate will fall to a market-clearing level.
   D. There will be persistent unemployment.

47. Which of the following is true of the quantity of money demanded?
   A. It falls when interest rates rise, because the opportunity cost of holding money increases.
   B. It rises when interest rates rise, because the return from holding money increases.
   C. It rises when interest rates rise, as long as inflation is declining.
   D. It falls when the money supply increases, as long as inflation remains constant.

48. If $MC = 2 - 0.4q + 3q^2$ is the marginal cost (MC) function of a firm where q is the level of output, the total variable cost (TVC) at q = 10 units will be ? Assume that fixed cost is zero (Hint: Apply integration method).
   A. 1000 units
   B. zero
   C. 100
   D. Difficult to calculate from the given data

49. For a consumer having the total utility function U $(x_1, x_2) = x_1^{0.5} x_2^{0.5}$, with $p_1 = 2$ and $p_2 = 5$ being prices of commodities x_1 and x_2 and a given income of 100, the quantities of demand for commodity x_2 and x_1 are given by:
   A. $x_2 = 25$ and $x_1 = 10$
   B. $x_2 = 50$ and $x_1 = 5$
   C. $x_2 = 10$ and $x_1 = 25$
   D. $x_2 = 2$ and $x_1 = 5$

50. In the theory of investment decision, Internal Rate of Return (IRR) is that rate of discount which makes the:
   A. Net present value, the maximum
   B. Gross present value, the maximum
   C. Net present value Zero
   D. Gross present value zero

51. Thorstein Veblen believed that the source of economic growth was
   A. Entrepreneurs
   B. Engineers
   C. Intellectuals
   D. The working class

52. The problem of the movement of the economy from one steady state to another is known as
   A. Traverse
   B. Turnpikes
   C. Golden age
   D. Stationary state

53. The condition for sustainable public debt is
   A. Zero fiscal deficit
   B. Zero revenue deficit
   C. Public expenditure keeps pace with GDP growth
   D. Real rate of interest be lower than the real rate of growth

54. I estimated an unknown demand curve $Q = \alpha + \beta P + \varepsilon$ and fitted the regression line $Q = a - bP$ using OLS technique. The following information is given to you: Sample size = 10, TSS = 80, ESS = 44. Which of the following is correct?
   A. RSS = 5
   B. If a = 4 and b = 2, demand is price unitary elastic at P = 1.5
   C. All coefficients are statistically significant at 5% level of significance.
   D. $R^2 = 0.25$

55. If the tax collection is too costly that generates too little revenues at the end, it violates the canon of
    A. Elasticity
    B. Flexibility
    C. Productivity
    D. None of the above

56. At what level of output q, the average cost (AC) will be minimum when the AC function is given by $AC = q^2 - 5q + 8$?
    A. 8
    B. 2.5
    C. $2q - 5$
    D. None of the above

57. What is the reason for the revision of India's economic growth rate from 4.7 percent to 6.7 percent during 2014-15?
    A. Demonetization effect
    B. Revision of national income estimation methodology
    C. Increase in exports
    D. Increase in total factor productivity

58. The concept of duality in a linear programming problem refers to the following property
    A. The optimal solution values of choice variables are equal for both minimization and maximization programs.
    B. All constraints are satisfied with equality signs only.
    C. Objective function values of minimization and maximization programs are equal, provided the optimal solutions do exist
    D. All of the above

59. When the technological progress occurs, it
    A. Shifts the production curve upward, which implies that with the same level of inputs, one can produce more output
    B. Shifts the production curve downward, which implies that with the same level of inputs, one can produce more output.
    C. Shifts the isoquant upward, which implies that a produce a given level of output, we need less inputs
    D. Shifts the isoquant downward, which implies that a produce a given level of output, we need more inputs

60. Up-front fee which must be paid by buyer to seller is called
    A. Call premium
    B. Discount premium
    C. Strike premium
    D. Exercise premium

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61. Which of these developments is most closely associated with Alfred Marshall
    A. The introduction of time into economic analysis
    B. The theory of comparative advantage
    C. The development of general equilibrium analysis
    D. The theory of comparative analysis

62. In Dual-Gap analysis pioneered by Hollis Chenery, developing countries typically face
    A. Trade-deficit and fiscal deficit.
    B. Investment-savings gap and foreign exchange constraint.
    C. Natural resource constraint and technology constraint.
    D. None of the above.

63. What is the total food grain production during 2016-17 in India?
    A.375.1 million tons
    B.275.68 million tons
    C.460.4 million tons
    D.250.1 million tons

64. According to the recommendations of the 14th Finance commission, the devolution of tax revenues to the states is:
    A.32%
    B.42%
    C.50%
    D.60%

65. According to the pure expectation hypothesis, which of the following statements is correct concerning the expectations of market participants in an upward sloping yield curve environment?
    A. Interest rates will increase and the yield curve will flatten
    B Interest rates will increase and the yield curve will steepen
    C. Interest rates will decrease and the yield curve will flatten
    D. Interest rates will decrease and the yield curve will steepen

66. Which one of the following is an appropriate sampling technique if the study population is scattered over a large area?
    A. Stratified Random sampling
    B. Simple Random Sampling
    C. Cluster Sampling
    D. None of the above

67. Since the population size is always larger than the sample size, then the sample statistic
    A. Can never be larger than the population parameter
    B. Can never be equal to the population parameter
    C. Can never be zero
    D. None of the above.

68. What is the share of Public health expenditure as a percentage of GDP in India during 2015-16?
    A. 2.0
    B. 1.9
    C. 1.2
    D. 1.3

69. The method of political economy in Smithian tradition is
    A. Purely deductive
    B. Purely inductive
    C. Deductive and dialectical
    D. Inductive and deductive

70. The grants-in –aid in Indian federal system are given to the states to
    A. Cover routine gaps in state budgets
    B. To finance state plans
    C. Assist states to undertake development activities
    D. None of the above

71. The change in aggregate income resulting from a one rupee change in taxes is the
    A. Price
    B. Employment multiplier
    C. Income multiplier
    D. None of the above

72. Effective exchange rate is
    A. Exchange rate corrected for prices
    B. Exchange rate in terms of hard currencies
    C. Average of nominal exchange rates
    D. Weighted average of exchange rates

73. The 'absorption' approach to balance of payments implies that
    A. exchange rate is critical
    B. domestic demand is critical
    C. size of export is critical
    D. foreign prices are critical

74. Which of the following happens when the demand curve is perfectly inelastic and the government imposes a tax?
    A. The whole tax is borne by the producers
    B. The whole tax is borne by the consumers
    C. The tax is borne partially by the producers and partially by the consumers
    D. No change in the tax burden of the consumers

75. The basic objective behind holding Buffer stocks by Food Corporation of India is:
    A. To cater to targeted public distribution system
    B. To stabilize prices during acute situations
    C. To meet the requirements of rich
    D. To enable farmers to meet their costs of production

76. The value of Gini coefficient ranges from
    A. -1 to +1
    B. 0 to 1
    C. 0 to 100
    D. -100 to +100

77. A major reason for fall in net barter terms of trade of agriculture vis-à-vis non-agricultural sector is:
    A. Agricultural goods are inferior goods.
    B. Agricultural goods tend to have lower income elasticity than their counterparts.
    C. Agricultural production has lower productivity.
    D. Farmers cannot afford high investment.

78. If the economic growth is essentially investment-led and unequal one, then the immediate constraint it may face is:
    A. Savings constraint
    B. Capital accumulation constraint
    C. Productivity constraint
    D. Demand constraint

79 An important implication that arises out of Lionel Robbins' famous definition of economic science is that
    A. Economics concerns strictly to efficient resource allocation alone.
    B. Economics should extend itself to issues of redistribution
    C. Economics should confine to policy advocacy
    D. All of the above.

80. According to long term national income estimates, the first structural break in growth of Indian economy between 1900-2000 is said to have occurred in
    A. 1991-92
    B. 1981-82
    C. 1971-72
    D. 1950-51