ENTRANCE EXAMINATIONS 2017

Ph.D. Economics (Code: P-90)

Time: 2 Hours (Ph.D Admission -January 2018 Session) Max. Marks: 80

HALL TICKET NUMBER

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INSTRUCTIONS

1. **Read these instructions carefully before answering.**

2. Enter your Hall Ticket Number on this page <u>and</u> also on the OMR answer sheet.

3. Answers are to be marked on the OMR answer sheet following the instructions provided thereon.

4. Handover the OMR answer sheet at the end of the examination.

5. Use of non-programmable calculator is allowed.

6. There are 80 questions in this paper. The Question Paper has <u>**two parts**</u> – **PART-A** and **PART-B**. The **PART-A** contains 40 questions and the **PART-B** also contains 40 questions. Marks obtained in **PART-A** will determine the merit rank in case of a tie in the total number of marks obtained.

7. Each correct answer carries <u>one</u> mark. There is <u>no negative</u> marking.

8. Only <u>ONE</u> option must be chosen for each question answered by a candidate. Some questions may have multiple correct answers. In such case, the option indicating correctness of all such answers must be chosen.

9. This question paper contains 17 pages including the cover page and pages for rough work.

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Ph.D. Economics

Max. Marks: 80   Duration: 2 Hours

Part-A
(Answer all questions from Question number 1 to 40)

1. The simple random sampling method can be used when the elements in the population
   A. are homogeneous and sampling frame can be generated
   B. are non-systematic, large in size and heterogeneous and easy to collect
   C. are heterogeneous and sampling frame can be generated
   D. none of the above

2. Open-ended questions are asked in surveys and interviews when
   A. All responses are known
   B. All exact responses are not known
   C. Responses can be given in 'Yes' or 'No' forms
   D. None of the above

3. Which of the following is true in the stratified sampling method?
   A. Every unit in the population has an equal chance of being included in the sample
   B. Each unit has the chance of being included in all samples
   C. Each and every unit in the population belongs to one and only one stratum
   D. Units in each stratum are heterogeneous

4. In sensitive or dangerous situations where respondents do not want to give information or it is difficult to get full elements of the population, which of the following is the suitable method?
   A. Tippet's random number tables
   B. The snowball sampling method
   C. The multi-stage sampling method
   D. The random sampling method

5. Lottery method is an example of
   A. Purposive sampling
   B. Individual convenience method
   C. Quota sampling method
   D. Simple random sampling

6. Which is true for the pilot survey?
   A. It helps in training of field staff and correcting the main questionnaire
   B. It is administered on all units of the total planned sample
   C. Pilot survey is one of the final survey methods in multi-stage sampling
   D. None of the above

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7. Which of the following is an appropriate sampling technique if the study population is scattered over a large area?
   A. The stratified random sampling
   B. The simple random sampling
   C. The cluster sampling
   D. The accidental sampling

8. While reporting National Income data, which one of the following divisions of organizational pattern is recognized by the National Accounts Statistics of India?
   A. Organized and unorganized
   B. Formal and informal
   C. Modern and traditional
   D. All of the above

9. As per the website www.mospi.gov.in, the Central Statistics Office (CSO) in India has
   A. 2 divisions (national accounts, and coordination & publications)
   B. 3 divisions (national accounts, economic statistics, and training)
   C. 4 divisions (national accounts, social statistics, economic statistics, and training)
   D. 5 divisions (national accounts, social statistics, economic statistics, training, and coordination & publications)

10. Under the National Accounts Statistics classification India, a sector of activity covered by the Factories Act of 1948 would be classified as the
    A. Organized sector
    B. Formal sector
    C. Regulated sector
    D. Legal sector

11. Which of the following concept is employed to understand the problem of the impact of a rise in general price level on real values for assessing the magnitude of national product?
    A. Inflation
    B. Deficit
    C. Devaluation
    D. Deflation

12. Which of the following statements is normative?
    A. Large government deficits cause an economy to grow more slowly
    B. People work harder if the wage is higher
    C. Printing too much money causes inflation
    D. The unemployment rate should be low

13. Consider the following two statements:
    (i) Higher interest rates on home loan will reduce house prices
    (ii) A rise in average temperature will increase the demand for the Sun screen products

Which of the following is true ?
    A. Both statements are in Normative Economics
    B. Both statements refer to the value judgements
    C. Both statements are objective statements that can be tested with available evidences
    D. Both statements are subjective statements

14. The 'aggregate data meta-analysis' is currently the most commonly used statistical procedure for
    A. Combining data or results from different studies on the same outcome of interest
    B. Assessing the reliability of a study from different sources
    C. Testing a theory based on empirical evidences
    D. Identifying an important study of current policy issues

15. A proposition in Economic theory involves the claim that "Conclusion Y follows from premise X". In "proof of contradiction", the negation of the claim is supposed, which is
    A. both X and Y are false
    B. X is true but Y is false
    C. X is false but Y is true
    D. None of the above

16. A researcher has been observing the following:
    When the price of tea is falling, it's demand is rising. When the price of mobile phone is rising, it's demand is declining. Like this, researcher has observed an inverse relationship between demand and it's own price. Hence, researcher comes to a general statement: "when price falls, demand rises and vice versa".

    The logic used in drawing this general statement is known as the
    A. Reductive
    B. Deductive
    C. Abductive
    D. Inductive method

17. In hypothesis testing, the power of a test is equal to
    A. 1 – probability of Type I error
    B. 1 – probability of Type II error
    C. 1 + probability of Type I error
    D. 1 + probability of Type II error

18. 'Degrees of freedom' in statistical analysis is defined as the
    A. (Number of frequencies) – (number of independent constraints on them)
    B. (Number of frequencies) – (number of dependent constraints on them)
    C. (Number of frequencies) + (number of independent constraints on them)
    D. (Number of frequencies) + (number of dependent constraints on them)

19. Which of the following test is used to make a choice between linear model and log-linear model ?
    A. t-test
    B. F-test
    C. Chow test
    D. MacKinnon, White and Davidson (MWD) test

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20. In a village, there are 101 households. A researcher has collected their income and expenditure data from all of them. The data collection method adopted here is known as
    A. The partial enumeration method
    B. The census method
    C. The sample method
    D. The quota sampling method

21. In general, which type of research is conducted at the early stage of decision making?
    A. Exploratory research
    B. Explanatory research
    C. Causal research
    D. All of the above

22. "Prisoner's Dilemma" stands as an anomaly to the principle of
    A. Cooperative strategies of people
    B. Competitive efficient outcomes
    C. Human motivation
    D. Consumer satisfaction

23. Which of the following economists criticized over-reliance on methodological individualism in economics?
    A. W. S. Jevons (1862)
    B. L. Walras (1954)
    C. Mark Blaug (1992)
    D. Alfred Marshall (1920)

24. "There is a tendency for economists to make abstract models and mathematical formulae with unrealistic assumptions. That is, there is a tendency for many economists to make and test theories that are not seen in the real life situations. Thus, these theories are mathematically beautiful but largely useless for practical applications".

    This phenomenon is popularly known is described as the
    A. Hume's problem
    B. Friedman's F-twist
    C. Smithian virtue
    D. Ricardian vice

25. Milton Friedman (1953), in his "Essays in Positive Economics", asserted that the power of positive economics stems from its
    A. Explanatory power
    B. Descriptive power
    C. Predictive power
    D. Realism of its assumptions

26. In hypothesis testing, using t-statistic, when the computed t-value is found to exceed the critical t-value at the chosen level of significance, then
    A. We do not reject the null hypothesis
    B. We reject the null hypothesis
    C. It depends on the alternate hypothesis
    D. It depends on the F and R-square values

27. The period of the business cycle in which the real GDP is increasing is called the
    A. Expansion
    B. Recession
    C. Peak
    D. Trough

28. Age of students in a School is an example of
    A. Discrete variable
    B. Continuous variable
    C. Discontinuous variable
    D. Bivariate variable

29. Which of the following is not true for the value of Gini-coefficient or Gini-ratio, which was developed by Corrado Gini ?
    A. It's value ranges from one to 100 when expressed in percentage form
    B. It's value ranges from zero to one when expressed in ratio form
    C. It is a measure of inequality in income and other variables
    D. It's higher value implies higher inequality

30. In his writings, Karl Marx designated human history encompassing four stages of development in relations to production. Which one is the correct stage?
    A. Primitive communism, agriculture, mixed and capitalism
    B. Primitive communism, agriculture, modern industry and capitalism
    C. Primitive communism, slave society, feudalism and capitalism
    D. None of the above

31. In the analysis of index numbers, the 'Splicing' method consists in
    A. changing a given base year of a series of index numbers and recasting them into a new series based on some recent new base year.
    B. combining two or more overlapping series of index numbers to obtain a single continuous series
    C. expressing a given series of index numbers as a percentage of the index number of the time period selected as the new base year.
    D. combining index numbers calculated by two or more different methods

32. Consider the following two statements having a cause-effect relationship:
    (i) Reserve Bank of India has recently put restrictions on few small banks in the country
    (ii) Small banks in private and co-operative sector in India are not in a position to withstand the competitions of bigger banks in the public sector

    Which one is correct?
    A. Statement (i) is the cause and statement (ii) is its effect
    B. Statement (ii) is the cause and statement (i) is its effect
    C. Both the statements (i) and (ii) are independent causes
    D. Both the statements (i) and (ii) are effects of independent causes

33. For testing the structural stability in a multiple regression model, one can use
    A. t-test
    B. Dickey-Fuller test
    C. DW test
    D. Chow test

34. In our discussion of research methodology, the methodology should provide justification for the methods of a research project, and not the methods themselves. This statement is closely related to which author and book?
    A. Schwandt, T. A. (2001), *Dictionary of Qualitative Inquiry*, 2nd edition, Thousand Oaks, CA, Sage (page 71).
    B. Gupta, S. C. (2012), Fundamentals of Statistics, 7th & enlarged edition, Himalaya Publishing House, New Delhi (chapter 15).
    C. Kaplan, A. (1964), *The Conduct of Inquiry: Methodology for Behavioral Science*, San Franscisco, Chandler (page 18 and 23)
    D. None of the above

Consider the following data Table 1. You may have to fill up the blank boxes from the known relationship among three variables. **Answer the following two questions (35-36) based on the data information in Table 1.**

Table 1 : Annual compound growth rates in area, yield and output of major tea growing states of India during 1980-81 to 1999-00 (growth rate is in %)
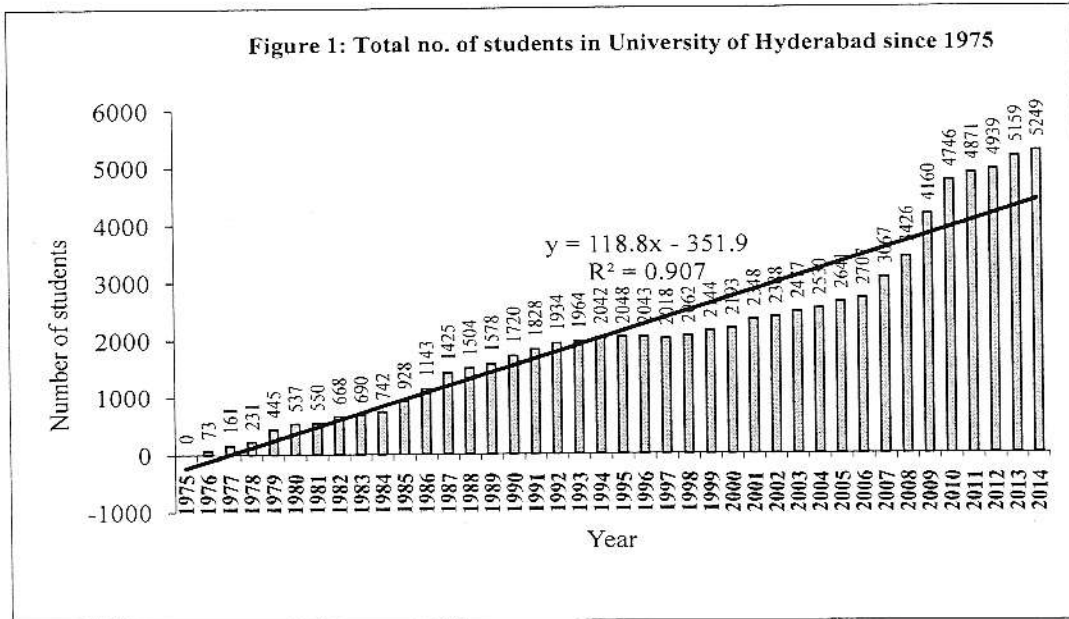
	Area	Yield	Output
Assam	0.89	1.46	...
Kerala	...	1.65	1.88
West Bengal	0.53	0.93	1.46
Tamil Nadu	1.82	...	3.45
India	0.89	1.31	2.20

Source: Calculated from 'Area and production of principal crops in India' (various issues)

Note : All growth rates are siginificant at 5 % level of significance

35. Which one of the following is not true in Table 1?
    A. Output growth in Tamil Nadu was higher than that of India by 1.25 percentage points
    B. The high output growth in Tamil Nadu was mainly contributed by area growth
    C. The high output growth in Tamil Nadu was mainly contributed by yield growth
    D. Yield growth contribution was higher than area growth towards output growth both at the national level and all states listed in Table 1 except Tamil Nadu

36. Based on the output growth rates in Table 1, which of the following ranking of Indian states is true (from the highest to the lowest value during the study period) ?
    A. Tamil Nadu, Kerala, Assam and West Bengal
    B. Tamil Nadu, West Bengal, Assam and Kerala
    C. Assam, Tamil Nadu, West Bengal and Kerala
    D. Tamil Nadu, Assam, Kerala and West Bengal

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The following diagram (Figure 1) shows the total number of students in the University of Hyderabad (UoH) since 1975. **Answer the following four questions (37 to 40) based on the information in Figure 1.**

Figure 1: Total no. of students in University of Hyderabad since 1975

$$y = 118.8x - 351.9$$
$$R^2 = 0.907$$

Source: 41st Annual Report, University of Hyderabad

37. In 1980, the share of women students (50.09%) was slightly higher than that of men students. Find the total number of women and men students in that year in UoH.
    A. 270 women and 267 men
    B. 269 women and 268 men
    C. 271 women and 266 men
    D. Difficult to calculate

38. UoH witnessed ....trend at the rate of about............ persons in the growth of total number of students since its inception year 1975.
    A. Constant, 118
    B. Downward, 351
    C. Upward, 119
    D. None of the above

39. The share of women students in UoH has been .... during the period from 1975 to 2014.
    A. Increasing
    B. Decreasing
    C. Constant
    D. Difficult to say based on the available information in Figure 1

40. Of the two statements from Figure 1: (i) "Actual total number of students was higher than the trend growth during 2009-2014", (ii) "Actual total number of students was less than the trend line during 1990-2008",
    A. Both statements are correct
    B. Only statement (i) is correct
    C. Only statement (ii) is correct
    D. Both statements are incorrect

Part-B
(Answer all questions from question number 41 to 80)

41. The total change in demand due to price change equals the substitution effect plus the income effect. This equation is called
    A. The Slutsky Identity
    B. The Marshallian demand function
    C. The Walrasian condition
    D. The Slutsky demand function

42. Which of the market conditions mimic a perfectly competitive market allocation?
    A. Perfect competition
    B. Cournot duopoly model
    C. Monopoly
    D. None of the above

43. According to the first fundamental theorem of welfare economics, under usual assumptions,
    A. a pareto optimal state is a market equilibrium
    B. a market equilibrium provides to each individual possible welfare compared to any feasible state
    C. a market equilibrium is a pareto optimal state
    D. a pareto optimal provides to each individual the highest possible welfare compared to any feasible state.

44. Which is true about the concept of 'Moral Hazard' problem?
    A. It arises when both the parties have complete information about each other
    B. One party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost
    C. Only A is true
    D. Only B is true

45. For a closed economy macroeconomic model in equilibrium, stock equilibrium occurs in
    A. Labour market
    B. Money market
    C. Capital market
    D. All of the above

46. Which of the following is inside money?
    A. Bank deposits
    B. Currency with public
    C. High powered money
    D. None of the above

47. The speculative demand for money occurs when
    A. Individuals hold money just in case an emergency happens
    B. Individuals hold money to buy things
    C. Individuals hold money, rather than other assets, because they are worried about the price of other assets falling down
    D. All of the above

48. If the real interest rate is negative, then
    A. the inflation rate is larger the nominal interest rate
    B. the inflation rate is smaller than the real interest rate
    C. lenders will gain
    D. the real value of a loan will increase

49. Keynes believed that falling wages were not a solution to persistent unemployment because
    A. falling wages demoralized workers
    B. falling wages would reduce the purchasing power of workers as consumers
    C. the unemployment was caused by frictional and structural factors
    D. wages would fall more than required to clear the labour market

50. As per the Economic Survey 2016-17 (Volume-II, Chapter 1), the average growth of agriculture sector in India has been remaining in the range of 3 percent since 1990, but the volatility of its output growth, as measured by the coefficient of variation, has ......

    A. increased
    B. been constant and stable
    C. declined
    D. marginally increased

51. With reference to the external sector of India in 2016-17, as per the Economic Survey 2016-17 reports, which of the following statements is true?
    A. The capital account surplus exceeding the current account deficit
    B. The current account deficit exceeding the capital account surplus
    C. The current account deficit equals to the capital account deficit
    D. The current account surplus equals to the capital account surplus

52. The Economic Survey 2016-2017 reported that the number of new individual tax payers in India (based on returns filed) has increased from 63.5 lakhs in 2015-16 to .... in 2016-2017.
    A. 70.7 Lakhs
    B. 80.7 Lakhs
    C. 90.7 Lakhs
    D. 100.7 Lakhs

53. Consider following three sentences on the concept of 'Culturable Waste Land' in the land-use statistics in India.

   (i) Land area available for cultivation, whether taken up or not taken up for cultivation once, but not cultivated during the last 5 years or more in succession including the current year for some reason or the other,
   (ii) This land may be either fallow or covered with shrubs and jungles which are not put to any use,
   (iii) This land may be accessible or inaccessible and may lie in isolated blocks or within cultivated holdings

   Which one of the following is true?
   A. Only (i) is true
   B. Only (i) and (ii) are true
   C. All three sentences are incorrect
   D. All three sentences are true

54. Which one of the following education services is provided by the ICDS programme through Anganwadi Centers across India ?
   A. Pre-school education for children within 3 to 6 years of age
   B. Pre-school education in rural areas for children between 6 to 10 years of age
   C. Primary education for children upto 14 years of age
   D. Primary education for children upto 10 years of age

55. The first Nobel Prize in Economic Sciences was awarded to Ragnar Frisch and Jan Tinbergen in 1969 for ....
   A. their pioneering analyses of saving and of financial markets
   B. their contributions to the theory of economic growth
   C. their contributions to the theory of optimum allocation of resources
   D. having developed and applied dynamic models for the analysis of economic processes

56. In the words of the Hartog Committee (1929), by 'wastage in education', we mean
   A. paying huge amount of school fees for primary school children
   B. retention in a lower class of a child for a period of more than two years
   C. premature withdrawal of children from schools at any stage before completion of the primary courses
   D. government providing free education for children upto 14 years of age

57. According to Karl Marx, 'Absolute Surplus Value' is obtained
   A. by reducing the cost of wage-goods by various means so that wage increase can be curbed
   B. by increasing the amount of time worked per worker in an accounting period
   C. both (A) and (B) are true
   D. only (A) is true

58. Following statements relate to assumptions of the Ricardian theory of rent
    (i) The fertility of land differs from land to land plots
    (ii) Land has alternative uses in farming, industry, construction etc.
    (iii) There exists perfect competition in the market
    (iv) There also exists no-rent land

    Which one of the following is true?
    A. Only (i) and (iv) are true
    B. Only (i) and (ii) are true
    C. Only (i), (iii) and (iv) are true
    D. All four are true

59. If each country engages in trade, using the comparative advantage model, each country gains by specialization and minimizes its ....
    A. political risks
    B. resource depletion
    C. opportunity costs
    D. investment costs

60. Which of the following is 'common exceptions' to free trade policies?
    A. Military industries
    B. Infant industries
    C. Cultural industries
    D. All of the above

61. "Compensatory spending" is necessary during ....
    A. Depression
    B. Inflation
    C. Stagnation
    D. Expansion

62. Goods and Services Tax (GST), recently implemented in India, is an example of
    A. one indirect tax for the whole nation
    B. multi-stage indirect tax for all states only
    C. one tax combining both direct and indirect taxes of consumers
    D. none of the above

63. Which is true about the healthcare service?
    A. healthcare service is a merit good
    B. healthcare service is excludable and rival in consumption
    C. healthcare service is rejectable by those unwilling to pay for it
    D. all of the above

64. Let X and Y be square matrices of order 5 where X is full rank and rank (Y) = 4. Then, for Z = X.Y, we must have
    A. Rank $(Z) = 5$
    B. Rank $(Z) > 5$
    C. Rank $(Z) > 4$
    D. Rank $(Z) \leq 4$

65. In the study of Health Economics, which of the following seeks to measure the benefits to individuals of additional life years following a medical intervention?
    A. Quality adjusted life years
    B. Cost-utility analysis
    C. Profit maximization
    D. Cost minimization of health expenditure

66. A commodity is subject to periodic increase in supply. Each time the supply increases, the supplier finds the total revenue decreasing. Which of the following must be true of the commodity?
    A. It has a price inelastic supply
    B. It has a price inelastic demand
    C. It has a price elastic demand
    D. It is an inferior good

67. The participation rate in labour force is affected by ......
    A. Higher real wages
    B. Lower fixed costs of working and lower non-labour income
    C. Changes in preferences between leisure and work
    D. All of the above

68. Let P, Q and R be three non-null events from a sample space Ω such that A, B and C are pair-wise disjoints. Then,
    A. P, Q and R are independent
    B. P, Q and R are pair-wise independent
    C. Both (A) and (B) above are true
    D. None of the above is true

69. According to the Expert Group on measurement of poverty, headed by Dr. C. Rangarajan (30th June, 2014), poverty line was estimated as monthly per capita consumption expenditure of
    A. Rupees 7035 in urban areas and rupees 4860 in rural areas
    B. Rupees 1500 in urban areas and half of it in rural areas
    C. Rupees 1407 in urban areas and rupees 972 in rural areas
    D. Rupees 1407 in rural areas and rupees 1172 of it urban areas

70. In the Solow growth model, the Golden Rule level of capital accumulation is the steady state with the highest level of
    A. total output per worker
    B. consumption per worker
    C. savings per worker
    D. capital per worker

71. An article entitled "Economic Development with Unlimited Supplies of Labour" by W. Arthur Lewis, published in May 1954 in '*The Manchester School*' deals with a model which
    A. explains the primary relationship between the two sectors such that when the modern agricultural sector expands, it extracts or draws labour from the subsistence agricultural sector
    B. assumes that all wage incomes and profits are invested for further growth
    C. envisages the capital accumulation in the modern industrial sector so as to draw surplus labour from the subsistence agriculture sector
    D. None of the above

72. If demand function of a commodity is given by $P = 30 - 3q$ where P is the price and q is the quantity demanded. When the consumer purchases 5 units, the consumer's surplus is
    A. 75 units
    B. 37.5 units
    C. 36.9 units
    D. 30.5 units

73. Let $Y = f(X)$ be a continuously twice differentiable function. Then, a sufficient condition for relative maximization at a point X_0 is
    A. $f'(X) = 0$
    B. $f''(X) > 0$
    C. $f''(X) < 0$
    D. $f'(X) = 0$ and $f''(X) < 0$

74. Which is true in the context of the simplex method in linear programming problem?
    A. slack and surplus variables are used to express constraints in equality form
    B. slack and surplus variables are collectively referred to as basic variables
    C. slack and surplus variables are treated as non-negative
    D. All of the above are true

75. The distribution underlying the Probit model is
    A. normal distribution
    B. logistic distribution
    C. F-distribution
    D. sometimes F-distribution and sometimes chi-square distribution

76. In the study of natural resource management, the "Hoteling's Rule" is related to
    A. Non-renewable resources
    B. Renewable resources
    C. Recyclable resources
    D. Non-extractable resources

77. Which is true for the concept of "Arbitrage" in Financial Economics ?
    A. It is generally described as a risk free trading profit
    B. It exists as a result of market inefficiencies
    C. Neither (A) nor (B) is true
    D. Both (A) and (B) are true

78. Which one of the following categories of items is not included in the core inflation rate published by the Reserve Bank of India?
   A. Food
   B. Luxury goods
   C. Manufacturing goods
   D. Services

79. According to the Fisher equation of exchange, an increase in the money supply is most likely to lead to inflation if
   A. The velocity of circulation decreases
   B. The number of transactions decreases
   C. There is a deflation
   D. The velocity of circulation and the number of transactions are constant

80. Overfishing in a public lake is an example of
   A. the positive externality
   B. the moral hazard problem
   C. the tragedy of the commons
   D. none of the above

---X---