

Entrance Examination – 2023

Ph.D. ECONOMICS

Time: 2 Hours

Max. Marks: 70

HALL TICKET NUMBER

INSTRUCTIONS

1. Read these instructions carefully before answering.
2. Enter your Hall Ticket Number on this page and 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 70 questions in this paper. The Question Paper has two parts. Each part consists of 35 questions.
7. Each correct answer carries one mark. There is no negative marking
8. If a particular question has more than one correct answer, select the best answer.
9. This question paper contains 18 pages including the cover page and 2 page for rough work.

Part A

1. In which type of studies 'Double Difference method' is generally employed?
 - A. Ethnographic studies.
 - B. Multiple regression.
 - C. Impact Evaluation.
 - D. Forecasting.

2. Which of the following is the psychometric scale that is used by researchers to measure the subjective view of respondents?
 - A. Likert Scale.
 - B. Laplace Scale.
 - C. Lorenz Scale.
 - D. Laggard Scale.

3. Consider statements: (i) Some farmers are great workers; and (ii) All villagers are farmers. Further, let V = Set of Villagers; F = Set of Farmers; G = Set of Great Workers.
Consider the following statements:
 - (I) $V \subset F$
 - (II) $F \subset V$
 - (III) $F \cap G \neq \phi$
 - (IV) $G \cap V \neq \phi$
 - A. Only (I) and (III) are true.
 - B. Only (I), (II) and (III) are true.
 - C. Only (II) and (III) are true.
 - D. Only (II), (III) and (IV) are true.

4. Statement "P implies Q" is negated when:
 - A. P is TRUE and Q is TRUE.
 - B. P is TRUE and Q is FALSE.
 - C. P is FALSE and Q is TRUE.
 - D. P is FALSE and Q is FALSE.

5. As size of sample in a field study is increased, generally, the sampling error _____ and systematic bias _____.
 - A. decreases; decreases.
 - B. increases; decreases.
 - C. increases; increases.
 - D. decreases; increases.

6. The principal of a school conducts an interview session of teachers and students with a view to explore the possibility of their enhanced participation in school programmes. This endeavour may be related to which type of research?
- A. Evaluation Research.
 - B. Fundamental Research.
 - C. Action Research.
 - D. Applied Research.
7. Let p be the statement "One can get to Europe" and q be the statement "one takes a plane to Europe," then:
- A. q constitutes a necessary condition of p .
 - B. q constitutes a sufficient condition for p .
 - C. q is both necessary and sufficient condition for p .
 - D. p only if q .
8. Under _____ design the ultimate size of the sample is not fixed in advance, but is determined according to mathematical decision rules on the basis of information yielded as survey progresses.
- A. Systematic sampling
 - B. Multi-stage sampling
 - C. Sampling with probability proportional to size
 - D. Sequential sampling
9. If we took the 500 people attending a school in New York City, divided them by gender, and then took a random sample of the males and a random sampling of the females, the variable on which we would divide the population is called the _____.
- A. Independent variable
 - B. Dependent variable
 - C. Stratification variable
 - D. Sampling variable
10. Which of a following is the prominent Austrian Economist who proposed 'spontaneous order' of free market as alternative to the 'equilibrium' concept in neoclassical economics?
- A. John Maynard Keynes
 - B. Adam Smith
 - C. A.C. Pigou
 - D. Frederick von Hayek

11. The assumption behind utility maximization hypothesis is that all economic agents are self-interested and rational, which is merely intuitive. Such method of theorization is called:
- A. Inductive logic
 - B. Stylized fact
 - C. Dialectical logic
 - D. Apriorism
12. Which measure is the most unreliable indicator of central tendency if data are skewed?
- A. Mean
 - B. Median
 - C. Mode
 - D. None of the above
13. Research based on a deductive theory is one that:
- A. Allows theory to emerge out of the data.
 - B. Involves testing an explicitly defined hypothesis.
 - C. Allows for findings to feed back into the stock of knowledge.
 - D. Uses qualitative methods whenever possible.
14. Consider two rational economic individuals (A and B). They have a cake which they want to divide between them and both like cake. A decision rule which is decided by them is as follows: one individual (say A) cuts the cake into two parts and the other individual (here B) will select one part of the cake which she will consume and by implication leave the other part as share that goes to the other individual. What is the share in which individual A will cut the cake
- A. 99 and 1
 - B. 75 and 25
 - C. 60 and 40
 - D. 50 and 50
15. In Durbin-Watson test if the null hypothesis is *No Negative Autocorrelation*, and the d statistic is lying $4-d_U \leq d \leq 4-d_L$, then take a decision
- A. Inconclusive
 - B. Reject the null
 - C. Accept the null
 - D. Either B or C

16. Identify a prominent methodologist of economics in the following:
- A. Simon Hunt
 - B. Mark Blaug
 - C. David Phillips
 - D. John Eatwell
17. Suppose that you are given observations on the monthly bond prices of 200 companies for 10 years. What type of data are these?
- A. Time Series
 - B. Cross Sectional
 - C. Panel Data
 - D. D Qualitative
18. Sustainable development refers to one of the following:
- A. Long lasting development without impacting environment negatively.
 - B. Economic decisions are taken focusing the growth.
 - C. Economic decisions are taken based on the demand and supply forces.
 - D. GDP increases owing to increase in general price level.
19. Human Development Index (HDI) is constructed with reference to
- A. Life expectancy at birth, real GDP per capita, gross enrolment ratio, adult literacy rate.
 - B. Life expectancy at birth, real GDP per capita, combined gross enrolment ratio, adult literacy rate.
 - C. Life expectancy, GDP per capita, infant mortality rate, literacy rate.
 - D. GDP per capita, infant mortality rate, literacy rate.
20. Three statements are given followed by four conclusions. Read all the conclusions and decide which of the given conclusions logically follows from the three given statements, disregarding commonly known facts.

Statements:

- 1. Some apples are watermelons.
- 2. All watermelons are fresh.
- 3. Some potatoes are fresh.

Conclusions:

- I. Some apples are fresh.
- II. Some potatoes are apples.
- III. Some watermelons are potatoes.
- IV. Some watermelons are apples.

- A. Only I follow.
B. Only I and II follow.
C. Only I and IV follow.
D. Either II or III and I follow.
21. In social sciences, _____ refers to a strategy of integrating different techniques in studying the same phenomenon, with a view to increasing the reliability of the research results.
- A. Stimulation
B. Professional Perspective
C. Experimental design
D. Triangulation
22. A shelf has 6 mathematics books and 4 physics books. Find the probability that 3 particular mathematics books will be together.
- A. $1/5$
B. $1/10$
C. $1/15$
D. $1/20$
23. Find the probability that in a family of 4 children there will be at least 1 boy and at least 1 girl.
- A. $7/8$
B. $1/8$
C. $3/8$
D. $15/16$
24. Consider a two stage game with two rational economic individuals (A and B).
- Stage 1, individual A offers a sum of money for individual B. A's contribution is multiplied by some factor by the experimenter and given to individual B.
Stage2: B decides how much to return to A.
- A. A will offer a positive amount and B will also return a positive amount
B. A will offer a positive amount and B will not return any amount
C. A will not offer any amount and B will not return and amount
D. A will not offer any amount but B will return a positive amount to A

25. National Food Security Act, (NFSA) 2013, marks a paradigm shift in the approach to food security from welfare to _____ based approach.
- A. Income
 - B. Poverty
 - C. Caste
 - D. Rights
26. _____ is a latecomer among the important philosophies guiding research in Economics.
- A. Intuitionism
 - B. Mercantilism
 - C. Positivism
 - D. Utilitarianism
27. What type of distribution is observed when most of the scores cluster around the lower end of the scale?
- A. A flat distribution
 - B. A positively skewed distribution
 - C. A negatively skewed distribution
 - D. A normal distribution
28. Which of the following is an example of Cross cultural studies?
- A. Comparative design
 - B. Case study design
 - C. Experimental design
 - D. Longitudinal design
29. Convenience sampling is an example of
- A. Probabilistic sampling
 - B. Stratified sampling
 - C. Non-probabilistic sampling
 - D. Cluster sampling
30. A research intends to explore the result of possible factors for the organization of effective mid-day meal interventions. Which research method will be most appropriate for this study?
- A. Descriptive survey method
 - B. Historical method
 - C. Ex-post facto method
 - D. Experimental method

31. The function $y = f(x) = x^3 - 3x^2 + 10$ has a minimum value of
- A. 0
 - B. 10
 - C. 6
 - D. 2
32. The integration of the function $f(x) = 1$ with respect to x is equal to
- A. $\log x$
 - B. $x + C$ where C is the constant of integration
 - C. $x^2 + C$ where C is the constant of integration
 - D. $\log(1/x) + C$ where C is the constant of integration
33. As a remedy to multicollinearity problem, doing which of the following may lead to specification bias?
- A. Adding new data values in the sample
 - B. Dropping one of the collinear variables
 - C. Transforming original variables
 - D. First differencing the successive values of the study variables
34. Which of the following is not a market signaling device?
- A. Guarantees and warranties
 - B. Coinsurance and deductibles
 - C. Hedging
 - D. A college education
35. Which of the following research techniques does not require the co-presence of the participants but is carried out remotely?
- A. Delphi method
 - B. *in-itinere* method
 - C. Heuristic method
 - D. None of the above

Part B

36. In which of the following senses, Immanuel Wallerstein has extended the centre-periphery logic of Dependency Theory to analyse contemporary world?
- A. By bringing statistical inference to the center of analysis.
 - B. By introducing semi-periphery category into world division of labour.
 - C. By addressing the concept of economic surplus.
 - D. By using over-determination as central logic.
37. Preferences of an individual consumer are described by a Cobb-Douglas utility function, $u(x, y) = 22x^4y^2$. Then such a utility function is:
- A. Strictly quasi-concave but not strictly monotonous.
 - B. Not strictly quasi-concave but strictly monotonous.
 - C. Both strictly quasi-concave and strictly monotonous.
 - D. Neither strictly quasi-concave nor strictly monotonous.
38. Market for a commodity, whose share in the national economy is negligible, is characterized by a downward sloping demand curve and fixed supply. Marginal cost of production is zero. Let p^* and q^* be market equilibrium price and quantity respectively, when there are no taxes on this commodity. Suppose that it is decided to levy a specific excise duty of Rs. t per unit and the realized taxes are fully spent on welfare schemes for the people. Ignoring distributional effects, which of the following is true?
- A. There is net gain in aggregate welfare.
 - B. There is net loss in aggregate welfare.
 - C. There is no change in aggregate welfare.
 - D. Can't decide based on the given information.
39. Developing countries sometimes object that free trade will lead them to specialize in primary products. They view this as undesirable because
- A. Their costs of producing primary products are higher than the costs of producing them elsewhere.
 - B. They believe that the prices of primary products tend to fall over time.
 - C. Production of primary products is harmful to the environment.
 - D. They would rather consume manufactured goods.
40. The movement to free international trade is most likely to generate short-term unemployment in which industries:
- A. Industries in which there are neither imports nor exports.
 - B. Import-competing industries.

- C. Industries that sell to domestic and foreign buyers.
D. Industries that sell to only foreign buyers
41. The value of a gold mine is initially estimated at $G(0) = ₹ 1400$ million, and is decaying at the rate $\frac{dG}{dt} + 0.04G(t) = 16$. Which of the following equations best describe the time path of the value of the gold mine?
- A. $G(t) = 1000e^{-0.04t} + 400$
B. $G(t) = 1000e^{0.04t} + 400$
C. $G(t) = 1400e^{0.04t} + 16$
D. $G(t) = 1400e^{-0.04t} + 400$
42. If P_x = export price index, P_m = import price index, Q_x = export quantity index, and Q_m = import quantity index. Developing countries tend to maintain that their commodity terms of trade have declined over the long run, suggesting that _____ has declined
- A. P_x/P_m
B. P_m/P_x
C. $(P_m/P_x)Q_m$
D. $(P_x/P_m)Q_x$
43. Consider matrix $B = \begin{bmatrix} 5 & 4 \\ -5 & -4 \end{bmatrix}$ then matrix B is:
- A. Non- Singular and Idempotent
B. Singular and Idempotent
C. Singular and not Idempotent
D. Non- Singular and not Idempotent
44. Based on the following paragraph, answer the following question.
- When one party is fully insured and cannot be accurately monitored by an insurance company with limited information, the insured party may take an action that increases the likelihood that an accident or an injury will occur. For example, if my home is fully insured against theft, I may be less diligent about locking doors when I leave, and I may choose not to install an alarm system. The possibility that an individual's behaviour may change because she has insurance is an example of a problem popularly known as
- A. Moral hazard problem
B. Principal-Agent problem
C. Adverse selection problem
D. Externality problem.

45. In which of the following models, each firm chooses its output price so as to maximize its profits given its beliefs about the price that the other firm will choose?

- A. Bertrand model
- B. Cartel model
- C. Cournot model
- D. Stackelberg model

46. Which of the following utility functions does not have convex indifference curves?

- A. $U(x, y) = \sqrt{x \cdot y}$
- B. $U(x, y) = \sqrt{x} + y$
- C. $U(x, y) = \sqrt{x^2 - y^2}$
- D. $U(x, y) = \frac{xy}{x+y}$

47. Consider an Edgeworth box representation of a 2-person, 2-commodity pure exchange economy, with each person having strictly positive endowments of each commodity, and well-behaved strictly quasi-concave and monotonously increasing utility functions. Further, let C = Set of all Core allocations; and E = Set of all competitive Equilibrium allocations. Then,

- A. If $x \in E$, then $x \in C$
- B. If $x \in C$, then $x \in E$
- C. $E = C$
- D. $E \cap C = \phi$

48. According to Marx if we examine the whole labour process, “both the instruments and the subject of labour are”, which of the following?

- A. Fixed Capital
- B. Means of Production
- C. Variable Capital
- D. Proportionate Inputs

49. Let matrix $w = \begin{bmatrix} 2 & 5 & 4 \\ -7 & -3 & 6 \\ 3 & 0 & 5 \end{bmatrix}$ then matrix w is:

- A. Positive definite
- B. Negative Definite
- C. Both positive Semi-definite and negative Semi-definite
- D. Indefinite

50. In a regression model, $y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon_t$ if the estimated value of $R^2 = .90$ and some of the coefficients are statistically insignificant, it refers to
- A. Multicollinearity
 - B. Heteroscedasticity
 - C. Autocorrelation
 - D. Non-stationarity
51. The "Error-learning models" lead to which of the following problem?
- A. Heteroscedasticity
 - B. Model selection bias
 - C. Auto-correlation
 - D. Multicollinearity
52. Suppose that over a year, Sonali's income (Y) rises from ₹28000 to ₹36000 per year and, as a result, her kitchen expenditure (C) increases from ₹2500 to ₹3500 per year. Assume there is a linear relation between the two variables, Y and C. What is the *marginal response* in C to a change in Y?
- A. 0.25
 - B. 8
 - C. 0.25
 - D. 0.125
53. In Post Keynesian economics, the basic idea of endogenous money supply is that
- A. Money supply is determined by high powered money
 - B. Money supply is determined by demand for bank credit and loans
 - C. Money supply is determined by private virtual currencies
 - D. Money supply is determined by long run expectations
54. In the Cambridge growth equation $g = s_c r$ where r is rate of profit and s_c capitalist propensity to save, the adjustments are made via demand prices, profit margins and income distribution because of the assumption of
- A. Constant Investment growth
 - B. Constant Capital-Labour ratio
 - C. Under-utilization of capacity
 - D. Normal utilization of capacity

55. According to Harris and Todaro model, creating urban employment by expanding industrial output
- A. is insufficient for solving the urban unemployment problem.
 - B. will generate capital intensive technologies.
 - C. will generate more government revenue through urban wages.
 - D. induces government to increase minimum wages.
56. In the 1970s and 1980s, economists studying the sources of growth observed no positive relationship between information and communications technology (ICT) investments and productivity. This is known as
- A. Solow Residual.
 - B. Solow Paradox.
 - C. Moore's Law.
 - D. Stiglitz Discrepancies.
57. Suppose the labour market is not in equilibrium, with unemployment above the natural rate. The new Keynesian offers several reasons why the labour market can stay away from equilibrium for long periods. Which of the following is not one of these reasons?
- A. Efficiency wages may hold wages below the equilibrium level.
 - B. Workers may resist wage cuts which reduce their wages below those paid to other workers in the same occupation.
 - C. Prices may be sticky downwards in some markets because consumers prefer stable prices.
 - D. Prices may be sticky downwards in some markets because consumers may judge quality by price.
58. Taylor Principle suggests that when the inflation rate rises, the nominal interest rate should be _____ by _____ than the inflation rate increase.
- A. increased; more
 - B. increased; less
 - C. decreased; more
 - D. decreased; less
59. If expectations of the future inflation rate are formed solely on the basis of past inflation rates, then economists would say that expectation formation is _____.
- A. irrational.
 - B. rational.
 - C. adaptive.
 - D. reasonable.

60. According to _____ the nominal interest rate equals the real interest rate plus the expected rate of inflation.
- A. Fisher equation
 - B. Keynesian equation
 - C. Monetarist equation
 - D. Marshall equation
61. Which among the following exhibits the largest expenditure share in the Union Budget for 2023-24 of the Government of India?
- A. Food, fertilizer and petroleum subsidies
 - B. Transport
 - C. Defence
 - D. Interest
62. Developing countries sometimes object that free trade will lead them to specialize in primary products. They view this as undesirable because
- A. Their costs of producing primary products are higher than the costs of producing them elsewhere.
 - B. They believe that the prices of primary products tend to fall over time.
 - C. Production of primary products is harmful to the environment.
 - D. They would rather consume manufactured goods.
63. The _____ theory analyzes the income distribution effects of trade in the short run, when resources are immobile among industries.
- A. Stolper-Samuelson.
 - B. Factor endowment.
 - C. Specific factors.
 - D. Overlapping demand.
64. Consider following statements for the Solow model of economic growth.
- (I) Solow model accepts almost all Harrod-Domar assumptions except the fixed factor proportions of inputs in production function.
 - (II) Solow model attains the equilibrium point when three growth rates (actual, warranted and natural) are equal to each other.
 - (III) Solow allows possibilities of factor substitution and diminishing returns of factor productivity.
- Then, which one of the following is not correct?
- A. Only (I)
 - B. Only (I) and (II)

- C. Only (II) and (III)
D. Only (II)
65. Which is true for the marginal social cost (MSC)?
- A. $MSC = \text{marginal cost of production} - \text{marginal emission cost}$
 - B. $MSC = \text{sum of average cost of production and marginal emission cost}$
 - C. $MSC = \text{sum of marginal cost of production and marginal emission cost}$
 - D. $MSC = \text{marginal emission cost} - \text{marginal cost of production}$
66. According to Marx, the wealth of those societies in which the capitalist mode of production prevails, presents itself as "an immense accumulation of" which of the following:
- A. Equity Investments
 - B. Money
 - C. Technologies
 - D. Commodities
67. Initially suppose the economy is in long-run equilibrium. Then suppose due to rising international tensions, there is an increase in military spending. According to the model of Aggregate Demand and Aggregate Supply, what happens to prices and output in the short run?
- A. Prices fall; output rises.
 - B. Prices fall; output falls.
 - C. Prices rise; output falls.
 - D. Prices rise; output rises
68. In the Kaleckian pricing theory, the mark-up is over and above
- A. Average Total Cost
 - B. Unit Direct Cost
 - C. Unit Average Fixed Cost
 - D. Unit material Cost
69. In the Bhaduri-Marglin Kaleckian model, investment depends on two separate components, the rate of utilization and the
- A. The Rate of Profit
 - B. The Share of Profits
 - C. Capitalist Propensity to save
 - D. The share of Wages

70. Which of the following correctly identifies an advantage of using adjusted R^2 over R^2 ?
- A. The penalty of adding new independent variables is better understood through adjusted R^2 than R^2
 - B. Adjusted R^2 corrects the bias in R^2
 - C. The adjusted R^2 can be calculated for models having logarithmic functions while R^2 cannot be calculated for such models
 - D. Adjusted R^2 is easier to calculate than R^2

Entrance Examination 2023
PhD (Economics)

KEY (revised)

(School of Economics)

1	C	36	B
2	A	37	C
3	A	38	C
4	B	39	B
5	D	40	B
6	C	41	A
7	B	42	A
8	D	43	B
9	C	44	A
10	D	45	A
11	D	46	C
12	A	47	A
13	B	48	B
14	D	49	D
15	A	50	A
16	B	51	A
17	C	52	D
18	A	53	B
19	A, B, C, D	54	D
20	C	55	A
21	D	56	B
22	C	57	A
23	A	58	A
24	C	59	C
25	D	60	A
26	C	61	D
27	B	62	B
28	A	63	C
29	C	64	A, B, C, D
30	C	65	C
31	C	66	D
32	B	67	D
33	B	68	B
34	C	69	B
35	A	70	A

Keyano
7-7-2023