

**COMBINED TECHNICAL SERVICES EXAMINATION
(NON-INTERVIEW POST)
COMPUTER BASED TEST
DATE OF EXAM: 04.08.2025 AN
PAPER – II –EVALUATION AND APPLIED
RESEARCH
(PG DEGREE STANDARD) (CODE: 213)**

1. The _____ programme is the strategy of Rural Development.
(A) People participation
(B) Self Help Groups
(C) Non-government organization
(D) ☒ Community Development
(E) Answer not known

2. The _____ are important basic needs for improvement of the quality of life and enhancement of the productive efficiency of the citizens.
(A) Communication and Banking
(B) ☒ Water Supply and Sanitation
(C) Science and Technology
(D) Investment and Savings
(E) Answer not known

3. Why did amendment made in FRBM Act?
(A) ☒ To give government flexibility in fiscal consolidation law
(B) To make system rigid in fiscal consolidation law
(C) Not to affect the government fiscal balance
(D) To make a successful consolidation of our fiscal balance
(E) Answer not known

4. Which of the following measures of RBI results into contraction of credit?
- (A) Reduction in Bank Rate
 - ☒ (B) Purchase of securities by the Central Bank
 - (C) Reducing the Cash reserve ratio of the banks
 - (D) Selective credit controls
 - (E) Answer not known
5. The components of time series are :
- (i) Stimulated variation
 - (ii) Irregular variation
 - (iii) Seasonal variation
 - (iv) Secular trend
- (A) (i), (ii) and (iii)
 - (B) ☒ (ii), (iii) and (iv)
 - (C) (iii), (iv) and (i)
 - (D) (iv), (i) and (ii)
 - (E) Answer not known
6. In a multicollinearity model, of $VIF_j > 5$, then X_j is _____ with other explanatory variable.
- ☒ (A) Highly correlated
 - (B) Highly distributed
 - (C) Normally distributed
 - (D) Uniformly distributed
 - (E) Answer not known

7. Which one of the following is not considered to be an assumption about the pattern of heteroscedasticity?
- (A) The error variance is proportional to X_i
 - (B) The error variance is proportional to Y_i
 - (C) The error variance is proportional to X_i^2
 - (D) The error variance is proportional to square of the mean value of Y
 - (E) Answer not known
8. The simplest remedy of solving the problem of multicollinearity is by
- (A) Adding more variables which are highly correlated with other regressors
 - (B) Dropping one of the variables which are highly correlated
 - (C) Supplementing the model with more categorical variables
 - (D) Supplementing the model with more ratio scale variables
 - (E) Answer not known
9. The simple linear regression model is
- (A) May linear in explanatory variable
 - (B) Non-linear in the parameter
 - (C) Linear in parameter
 - (D) May not be linear in explanatory variable
 - (E) Answer not known

10. Which among the model given is not a qualitative response regression model?
- (A) Linear probability model
 - (B) Classical linear regression model
 - (C) Probit model
 - (D) Logit model
 - (E) Answer not known
11. In a linear probability model, the
- (A) Regression is dichotomous
 - (B) Regression is ordinal variable
 - (C) Regressor is dichotomous
 - (D) Regressor is ordinal
 - (E) Answer not known
12. A researcher will reject the null hypothesis. If the researcher's finding is said to be
- (A) 95% probability finding
 - (B) 5% confidence finding
 - (C) Not statistically significant
 - (D) Statistically significant
 - (E) Answer not known

13. Random walk model is normally associated with
- (A) Utility theory
 - (B) Indifference curve approach
 - (C) Laws of production
 - ☒ (D) Exchange rate theory
 - (E) Answer not known
14. In an additive decomposition model used in time series analysis, the de-trended series is computed by
- (A) Adding trend – cycle component to the data
 - ☒ (B) Subtracting trend – cycle component from the data
 - (C) Dividing the data by cyclical component
 - (D) Adding seasonal and irregular component to the data
 - (E) Answer not known
15. A time series will be stationary if its
- (i) Mean remains the same (mean reversion)
 - (ii) Time varying mean
 - (iii) Time varying variance
 - (iv) Auto covariance remains the same
- (A) (i) and (ii) only
 - (B) (ii) and (iii) only
 - (C) (iii) and (iv) only
 - ☒ (D) (iv) and (i) only
 - (E) Answer not known

16. _____ is the one of the simplest and oldest method of drawing a sample of size n from a population containing N units.
- (A) ☒ Simple Random Sampling (B) Stratified Sampling
 (C) Systematic Sampling (D) Cluster Sampling
 (E) Answer not known
17. With the usual notations, in SRSWOR, the variance of the sample mean is given by
- (A) $\text{Var}(\bar{y}_n) = (n - N)S^2$ (B) ☒ $\text{Var}(\bar{y}_n) = \left(\frac{1}{n} - \frac{1}{N}\right)S^2$
 (C) $\text{Var}(\bar{y}_n) = \left(\frac{1}{N} - \frac{1}{n}\right)S^2$ (D) $\text{Var}(\bar{y}_n) = (N - n)S^2$
 (E) Answer not known
18. In case of inverse sampling, the proportion p of M units of interest contained in a sample of ' n ' units is :
- (A) m/n (B) $(m - 1)/n$
 (C) $(m - 1)/n + 1$ (D) ☒ $(m - 1)/(n - 1)$
 (E) Answer not known
19. Lahiri's method is used in
- (A) Sampling with replacement
 (B) ☒ Sampling with varying probabilities
 (C) Sampling with strata
 (D) Sampling without replacement
 (E) Answer not known

20. The rejection probability of null hypothesis when it is true is called
- (A) Level of confidence (B) Level of significance
(C) Level of Margin (D) Level of Rejection
(E) Answer not known
21. To test $H_0 : \mu = \mu_0$ vs $H_1 = \mu > \mu_0$ when the population standard deviation is known, the appropriate test is :
- (A) t - test (B) χ^2 - test
(C) z - test (D) F - test
(E) Answer not known
22. Distinguish the statement which is not correct
- (A) Power of the test same as power of critical region
(B) $P(\text{Type I error}) \leq P(\text{Type II error})$
(C) $P(\text{rejecting null hypothesis}) = P(\text{Type I error})$
(D) $P(\text{rejecting null hypothesis}) = P(\text{Type II error})$
(E) Answer not known
23. The intersection of a column and a row in a worksheet is called
- (A) Value (B) Cell
(C) Column (D) Row
(E) Answer not known

24. In MS Excel, the comments put in cells are called
- (A) Smart tip (B) ☒ Cell tip
(C) Soft tip (D) Web tip
(E) Answer not known
25. Which is the main location for Excel commands?
- (A) ☒ Ribbon (B) Tabs
(C) Formula bar (D) Title bar
(E) Answer not known
26. An example for inelastic demand is
- (A) Horlicks (B) ☒ Salt
(C) TV (D) Car
(E) Answer not known
27. As per indifference curve analysis, marginal utility of money
- (A) Increases with lower in marginal utility of money
(B) ☒ Increases with higher marginal utility of money
(C) Decreases with lower marginal utility of money
(D) Remains constant with increase in marginal utility of money
(E) Answer not known

28. The objectives of monetary policy are

- (i) Price stability
- (ii) Economic Growth
- (iii) Full employment
- (iv) Public debt

- (A) (i), (iii) and (iv)
- (B) (ii), (iii) and (iv)
- (C) (i), (ii) and (iv)
- (D) (i), (ii) and (iii)
- (E) Answer not known

29. The instruments of fiscal policy are

- (i) Taxation
- (ii) Public expenditure
- (iii) Public debt
- (iv) Cash Reserve Ratio

- (A) (i), (ii) and (iv)
- (B) (ii), (iii) and (iv)
- (C) (i), (iii) and (iv)
- (D) (i), (ii) and (iii)
- (E) Answer not known

30. The quantity of a commodity which a farmer actually sells in the market is called

- (A) Consumer surplus
- (B) Marketable surplus
- (C) Marketed surplus
- (D) Farm surplus
- (E) Answer not known

31. India ranks _____ in production of fruits and vegetables.

- (A) First
- (B) ☒ Second
- (C) Third
- (D) Fourth
- (E) Answer not known

32. The Non-Institutional Agencies For Agricultural Finance are

- (i) Local money lenders
 - (ii) Landlords
 - (iii) Co-operative societies
 - (iv) Commercial Banks
- (A) (i), (ii) and (iv) only
 - (B) (ii), (iii) and (iv) only
 - (C) ☒ (i) and (ii) only
 - (D) (i) and (iv) only
 - (E) Answer not known

33. Whom among the following economists is the pioneer having conducted studies on the extent of poverty based on average calorie intake?

- (A) S. Mahendra Dev and C. Ravi
- (B) ☒ P.D. Ojha
- (C) Montek Ahluwalia
- (D) D.T. Lakdawala
- (E) Answer not known

34. Internal rate of return is the rate of discount which reduces N.P.V (Maximizes Net Benefits) to
- (A) ☒ Zero (B) One
(C) Greater than one (D) Less than one
(E) Answer not known
35. If one input is variable and all other inputs are fixed the firm's production function exhibits the
- (A) ☒ Law of variable proportions (B) Law of returns to scale
(C) Economies of scale (D) Diseconomies of scale
(E) Answer not known
36. Consider the following statements :
- Assertion [A] : The world of everyday life is the laboratory of sociology
- Reason [R] : The circumstances of the external world can be controlled for sociology
- (A) ☒ [A] is true but [R] is false
(B) [A] is false but [R] is true
(C) Both [A] and [R] are true but [R] is the incorrect explanation of [A]
(D) Both [A] and [R] are false
(E) Answer not known

37. Which of the following refers to “the rewards or punishments used to establish social control, that is, to enforce the norms in a society”?
- (A) Morality (B) Religion
(C) ☒ Sanctions (D) Public opinion
(E) Answer not known
38. The cooperation which is found between two political parties is termed as
- (A) Secondary Cooperation (B) ☒ Tertiary Cooperation
(C) Organisation Cooperation (D) Progressive Cooperation
(E) Answer not known
39. _____ believes that human behaviour can be explained in much the same way as the behaviour of matter is
- (A) ☒ Positivist approach (B) Functionalist approach
(C) Conflict approach (D) Interactionist approach
(E) Answer not known
40. Poor young men who are not capable of paying the bride price and maintaining the wife individually after marry a women collectively is one of the causes of
- (A) ☒ Polyandry (B) Polygyny
(C) Fraternal polyandry (D) Sororal polygyny
(E) Answer not known

41. Match the authors with their corresponding works :

- | | |
|--|--------------------|
| (a) The division of labour in society | 1. Talcott Parsons |
| (b) The proper sphere of Government | 2. Herbert Spencer |
| (c) The structure of Social action | 3. Durkheim |
| (d) Social theory and Social Structure | 4. Robert K-Merton |

- | | (a) | (b) | (c) | (d) |
|-----|------------------|-----|-----|-----|
| (A) | 3 | 1 | 4 | 2 |
| (B) | 3 | 4 | 2 | 1 |
| (C) | 2 | 3 | 1 | 4 |
| (D) | 3 | 2 | 1 | 4 |
| (E) | Answer not known | | | |

42. Consider the following statements :

Assertion [A] : The 'Vertical solidarity' of the castes has been replaced by 'horizontal solidarity'.

Reason [R] : Each caste looks at the other with suspicion, contempt and jealousy.

- (A) [A] is true but [R] is false
(B) [A] is false but [R] is true
(C) Both [A] and [R] are true but [R] is not the correct explanation of [A]
(D) Both [A] and [R] are true and [R] is the correct explanation of [A]
(E) Answer not known

43. In 'Indian Urban Poverty Report' was published in the year
- (A) 2001 (B) 2009
(C) 2010 (D) 2021
(E) Answer not known
44. Which of the following statements are true about tribal communities?
- (i) The word tribe means indigenous people
(ii) Tribals have a well developed language and literature
(iii) A state like odisha is home to over 60 different tribal groups
- (A) (i) and (ii) only (B) (ii) and (iii) only
(C) (i) and (iii) only (D) (i) only
(E) Answer not known
45. Which of the following schemes is implemented to facilitate and promote livelihood opportunities and entrepreneurship to the tribal population?
- (A) Tribal forest dwellers empowerment scheme
(B) Comprehensive tribal development programme
(C) Venture capital fund for scheduled tribes
(D) Pradhan Mantri Janjatiya Vikas Mission
(E) Answer not known
46. 'Bakthi movement' is a type of movement of
- (A) Reformative (B) Alternative
(C) Revolutionary (D) Revivalist
(E) Answer not known

47. Choose the correct answer :

Which period designated as the united nations decade for women
_____ United Nations Programme that began.

- (A) January 1, 1975 (B) ☒ January 1, 1976
(C) January 1, 1977 (D) January 1, 1978
(E) Answer not known

48. Which of the followings is the objective of the scheme are – Awareness generation among the women from rural areas and urban slums and economic empowerment of women?

- (A) The programme of support to training – cum – Employment for Women (STEP)
(B) Mahila Samriddhi Yojana
(C) Rashtriya Mahila Kosh (RMK)
(D) ☒ Indira Mahila Yojana (IMY)
(E) Answer not known

49. Which of the following statements are true about 73rd constitution Amendment Act?

- (i) Rural Women working as laboures are now able to exercise some amount of political power on par with men.
(ii) As per this act 2/3 of the Panchayat Raj Seats are reserved for women.
(iii) Women have the role to play in matters of decision making that affect village affairs.

- (A) (i) only (B) (i) and (ii) only
(C) ☒ (i) and (iii) only (D) (iii) and (ii) only
(E) Answer not known

50. Which test has taken into account the number of frequencies and not the independent values pertaining to each frequency?
- (A) t-test (B) ANOVA
(C) U-test (D) ☒ Chi-square test
(E) Answer not known
51. What is the need of application of similarity measurement throughout research situation?
- (A) to get validity (B) ☒ to get reliability
(C) to get content validity (D) to get content reliability
(E) Answer not known
52. What is the first step in the research process?
- (A) ☒ Formulation of problem and objectives
(B) Method of enquiry
(C) Measuring and scaling techniques
(D) Data collection
(E) Answer not known
53. It is the discrepancy between a sample statistic and the true population parameter being estimated (or) surveyed
- (A) Sampling (B) Variation
(C) ☒ Sampling Error (D) Deviation
(E) Answer not known

54. A comprehensive layout of the research report should comprise with which of the following orders?

(i) Preliminary pages

(ii) The main text

(iii) The end matter

(A) only (i)

(B) (i) and (ii) only

(C) (i), (ii) and (iii)

(D) only (iii)

(E) Answer not known

55. Which of the following statements are true above research gap?

(i) Identifying the research gap relies on an exhaustive review of the literature

(ii) A research gap is a question that has been answered or a problem that has been solved earlier

(iii) It makes the research publishable as it proves that you are not duplicating the research.

(A) (i) and (ii) only

(B) (ii) and (iii) only

(C) (i) and (iii) only

(D) (i) only

(E) Answer not known

56. Which of the following are true about preparation of Budget estimates?

- (i) Part I relates to revenue and to standing charges like permanent establishment, travelling allowances etc.
- (ii) Part II A relates entirely to new schemes of expenditure
- (iii) Part II B relates to continuing schemes (eg) purchase of raw material

- (A) ☒ (i) only
- (B) (i) and (iii) only
- (C) (i) and (ii) only
- (D) (ii) and (iii) only
- (E) Answer not known

57. Assertion [A] : Resistance from Government Employees is the challenge of implementing ICT applications in India.

Reason [R] : ICT applications empower the discretionary powers of a civil servant.

- (A) [A] and [R] are correct; [R] is the correct explanation of [A]
- (B) [A] and [R] are correct; [R] is not correct explanation of [A]
- (C) ☒ [A] is true; [R] is false
- (D) [R] is true; [A] is false
- (E) Answer not known

58. Choose the correct answer :

- (1) THAI scheme is to provide minimum basic infrastructure facilities to all the habitation
 - (2) Classification village Panchayat on the basis of population (2011) census
 - (3) "Habitation" as the unit of development of the Government and Tamil Nadu
 - (4) THAI scheme was introduced in the year 2013 – 2014
- (A) (3) and (4) only correct (B) (1) and (3) only correct
(C) (2) and (3) only correct (D) (4) and (1) only correct
(E) Answer not known

59. Choose the correct answer :

- (1) The standing committee system was established in 1953
 - (2) An appropriation bill is mandatory for withdraw of money and Grants to be voted by the Loksabha
 - (3) The Finance Act legalises the expenditure side of the budget
 - (4) Supplementary Grants are authorized only by the parliament
- (A) (1) and (4) only correct
(B) (2) and (3) only correct
(C) (4) and (2) only correct
(D) (1) and (2), (3) only correct
(E) Answer not known

60. What is the expansion of UMIS, a single platform for higher education developed by TNeGA?

- (A) University Migration Information System
- ☒ (B) University Management Information System
- (C) Universal Management Information System
- (D) Universal Migration Information System
- (E) Answer not known

61. Match List I and List II and select the correct match.

List I		List II	
(a)	1960	1.	Committee on community development and Panchayati Raj
(b)	1962	2.	Study team on the Audit of accounts of Panchayati Raj bodies
(c)	1965	3.	Committee on Rationalisation of Panchayat Statistics
(d)	1976	4.	Study team on Nyaya Panchayats

- | | (a) | (b) | (c) | (d) |
|--------------------------------------|------------------|-----|-----|-----|
| (A) | 1 | 2 | 3 | 4 |
| (B) | 2 | 1 | 4 | 3 |
| (C) | 4 | 2 | 1 | 3 |
| ☒ (D) | 3 | 4 | 2 | 1 |
| (E) | Answer not known | | | |

62. Which of the following award is given to an eminent woman on International Women's Day by the Government of Tamil Nadu?
- (A) Kalpana Chawla Award
 - (B) ☒ Avvaiyar Award
 - (C) Shakthi Award
 - (D) Muthulakshmi Reddy Award
 - (E) Answer not known
63. Since the year 1994, How many State Finance Commissions have been established in Tamil Nadu?
- (A) 4
 - (B) 5
 - (C) 6
 - (D) ☒ 7
 - (E) Answer not known
64. Arrange the following committees on Administrative reforms during British rule in chronological order
1. Committee on organisation and procedure
 2. Committee on the work simplification at the District level
 3. Government of India Secretariat procedures committee
 4. Committee on Secretariat reorganisation
- (A) 2, 3, 1, 4
 - (B) ☒ 2, 3, 4, 1
 - (C) 1, 2, 4, 3
 - (D) 3, 1, 4, 2
 - (E) Answer not known

65. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched by
- (A) Narashima Rao (B) Rajiv Gandhi
(C) Indira Gandhi (D) ☒ Man Mohan Singh
(E) Answer not known
66. Choose the correct answer :
Pick up the odd one out, in terms of incentives
- (A) Reduction in Emoluments
(B) Reduction in Rank
(C) Loss of Prestige
(D) ☒ Due Recognition
(E) Answer not known
67. Independent variables that are not related to the purpose of the study, but may affect the dependent variable are termed as
- (A) Continuous variables (B) Discrete variables
(C) Intraneous variables (D) ☒ Extraneous variables
(E) Answer not known

68. Reason and Assertion type

Assertion [A] : Judgement sampling is a non-probability sampling method.

Reason [R] : Snowball sampling is a non-probability sampling method.

- (A) [A] is true but [R] is false
- (B) Both [A] and [R] are true; but [R] is the correct explanation of [A]
- (C) [A] is false, [R] is true
- (D) Both [A] and [R] are true, but [R] is not the correct explanation of [A]
- (E) Answer not known

69. Choose the correct answer

1. Exceptional Grants Authorised for Common Purpose
 2. Token Grant authorised by blank cheque
 3. Prior to vote by Parliament, excess Grant must be approved by the public accounts committee.
 4. Contingency fund of India is operated by executive action.
- (A) 3 and 4 only correct
 - (B) 2 and 3 only correct
 - (C) 1 and 4 only correct
 - (D) 2 and 1 only correct
 - (E) Answer not known

70. Which among the following analysis can be used in case of both measurable and non-measurable variables for the purpose of simultaneously predicting a set of dependent variables from their joint covariance with a set of independent variables?
- (A) Multiple regression analysis
 - (B) Multiple discriminant analysis
 - (C) Multivariate analysis of variance
 - ☒ (D) Canonical analysis
 - (E) Answer not known
71. _____ is an important element in the project planning cycle.
- (A) Measures
 - (B) ☒ Project objective
 - (C) External environment
 - (D) Capital goods
 - (E) Answer not known
72. _____ is project organization.
- (A) Defining the project scope
 - (B) Identifying project stakeholders
 - (C) Developing project plans
 - ☒ (D) Structuring project teams
 - (E) Answer not known
73. _____ is project planning.
- ☒ (A) Defining project scope and objectives
 - (B) Identifying project stakeholders
 - (C) Conducting market surveys
 - (D) Developing project schedules
 - (E) Answer not known

74. PERT/cost is an extension of the basic _____ system.

- (A) GERT
- (B) CPM
- (C) LOB
- (D) ☒ PERT
- (E) Answer not known

75. _____ is a logical framework matrix.

- (A) ☒ A project planning tool
- (B) A project evaluation tool
- (C) A project monitoring tool
- (D) A project management framework
- (E) Answer not known

76. _____ methods is used for project appraisal.

- (A) ☒ NPV, IRR, BCR
- (B) CPM, EVM
- (C) SWOT, PESTEL
- (D) SW, TAL
- (E) Answer not known

77. _____ is the purpose of project monitoring.

- (A) To identify project risks
- (B) ☒ To evaluate project progress
- (C) To develop a project plan
- (D) To implement projects
- (E) Answer not known

78. Which standard provides a guide for performing process improvement within technology organisations?
- (A) ☒ ISO/IEC 15504
 - (B) CIPP model
 - (C) Outcome mapping
 - (D) Common assessment framework
 - (E) Answer not known
79. What do the roots of a problem tree
- (A) The possible solutions
 - (B) The consequences of the Issues
 - (C) ☒ The underlying causes of the problem
 - (D) The stakeholders Involved
 - (E) Answer not known
80. _____ negotiation in project management
- (A) ☒ Reaching a mutually acceptable agreement
 - (B) Allocating project Resources
 - (C) Securing funding for project
 - (D) Developing project plans
 - (E) Answer not known
81. Which one of the following is not a measurement scales
- (A) Nominal scale
 - (B) ☒ Internal scale
 - (C) Interval scale
 - (D) Ratio scale
 - (E) Answer not known

82. _____ research is systematic empirical inquiry in which the scientist does not have direct control of independent variable because their manifestation has already occurred or because they are inherently not manipulatable.
- (A) Exploratory (B) ☒ Ex-post facto
(C) Experimental (D) Exponential
(E) Answer not known
83. In factor analysis, which of the following is used to determine the number of factor to extract
- (A) Variance Inflation Factor (VIF)
(B) ☒ Eigen values
(C) P-values
(D) Cronbach's Alpha
(E) Answer not known
84. Arranging chronological order research design is of
- (1) Exploration
(2) Diagnosis
(3) Description
(4) Experimentation
- (A) (2), (3), (1), (4) (B) (1), (2), (4), (3)
(C) ☒ (1), (3), (2), (4) (D) (3), (1), (4), (2)
(E) Answer not known

85. Choose the right matches among type

- (1) Field report — Subject matter report
- (2) Physical report — Based on presentation and analysis
- (3) Independent report — Prepared by non-profit research organisation
- (4) Functional report — Based on time interval
- (A) (1) and (3) are correct
- (B) (1) and (2) are correct
- (C) (2) and (3) are correct
- (D) (3) and (4) are correct
- (E) Answer not known

86. Match the following

Types of Research		Meanings
(a) Descriptive research	1.	Research is that related to some abstract idea(s) or theory
(b) Applied research	2.	Research concerned with qualitative phenomenon(ie) relating to (or) involving quality (or) kind
(c) Quantitative research	3.	Research aims at finding a solution for an immediate problem facing a society (or) business
(d) Qualitative research	4.	Research is based on the measurement of quantity
(e) Conceptual research	5.	Research includes surveys and fact-finding enquires of different kinds

	(a)	(b)	(c)	(d)	(e)
(A)	5	3	4	2	1
(B)	3	5	4	1	2
(C)	1	3	5	2	4
(D)	5	4	3	2	1
(E)	Answer not known				

87. Two -way ANOVA techniques is used when the data are classified on the basis of

- | | |
|----------------------|-----------------|
| (A) Three factors | (B) Two factors |
| (C) Four factors | (D) One factor |
| (E) Answer not known | |

88. Match the system with its functionality

Column A	Column B
(a) CRM	1. Supply coordination
(b) ERP	2. Customer Management
(c) SCM	3. Integration of Business processes
(d) OAS	4. Automating clerical tasks
(e) EIS	5. Strategic Insights for executives

	(a)	(b)	(c)	(d)	(e)
(A) ☒	2	3	1	4	5
(B)	1	4	2	3	5
(C)	2	5	3	1	4
(D)	3	1	2	5	4
(E)	Answer not known				

89. An EIS (Executive Information System) provides

- (A) Detailed operational data
- ☒ (B) Analyzing trends and forecasting
- (C) Real time Transactions
- (D) Customer service Interactions
- (E) Answer not known

90. The section of the Indian IT act that addresses the punishment for identify theft?

- (A) Section 65
- ☒ (C) Section 66 C
- (B) Section 66
- (D) Section 72
- (E) Answer not known

91. A _____ links two or more computers to share data or resources

- (A) Material planning system (B) Database
(C) Dissemination (D) Network
(E) Answer not known

92. The _____ is responsible for the databases data warehouses of an organization.

- (A) Software Engineer (B) Database administrator
(C) Network Administrator (D) Cyber security
(E) Answer not known

93. Match the following :

Column A (Shapes used in
dataflow diagram-DFD)

Column B
(Purpose)

- | | |
|---------------------|--------------------|
| (a) Rounded boxes | 1. External entity |
| (b) Square boxes | 2. Data stores |
| (c) Open Rectangles | 3. Data flows |
| (d) Arrows | 4. Processes |

- | | | | | |
|-----|------------------|-----|-----|-----|
| | (a) | (b) | (c) | (d) |
| (A) | 4 | 1 | 2 | 3 |
| (B) | 2 | 3 | 4 | 1 |
| (C) | 4 | 1 | 3 | 2 |
| (D) | 2 | 4 | 1 | 3 |
| (E) | Answer not known | | | |

94. Match the following :

Column A	Column B
(a) Phishing	1. Presenting unauthorized access
(b) Fire wall	2. Converts data into unreadable format
(c) Ransomware	3. Malware that replicates itself
(d) Trojan Horse	4. Sending fraudulent emails to trick individuals
(e) Malware	5. Cyber attack that demands a ransom to decrypt data

	(a)	(b)	(c)	(d)	(e)
(A)	4	1	5	3	2
(B)	1	2	3	4	5
(C)	5	2	1	4	3
(D)	3	1	5	2	4
(E)	Answer not known				

95. The purpose of antivirus software is to

- (A) identify and remove malware from computer
- (B) protect against phishing attacks
- (C) Encrypt sensitive files
- (D) secure wireless network
- (E) Answer not known

96. Which one of the following statements is false?
- (A) Set I of all integers with binary operation defined as $a * b = a + b + 1 \forall a, b \in I$ is an abelian group
 - (B) If every element of the group G has self inverse then G is abelian
 - (C) If Multiplicative group G is abelian iff $(a * b)^2 = a^2 * b^2 \forall a, b \in G$
 - (D) ☒ If G is a group such that $(a * b)^n = a^n * b^n$ holds for two consecutive integers then G is abelian
 - (E) Answer not known
97. If G is a group then the set of all automorphisms of G is a
- (A) Ring
 - (B) Field
 - (C) Commutative ring
 - (D) ☒ Group
 - (E) Answer not known
98. If ϕ is a homomorphism from the ring R in to the ring R' then
- (A) $\phi(0) = 0'$ (0 and $0'$ are respective additive identity of R and R')
 - (B) ☒ $\phi(1) = 1'$ (if 1 and $1'$ are multiplicative unit elements if R and R' have)
 - (C) $\phi(-a) = -\phi(a) \forall a \in R$
 - (D) $J\sqrt{2} = \{m + n\sqrt{2} / m, n \text{ are integers}\}$ $(J\sqrt{2}, +, \cdot)$ is a ring under usual addition and multiplication
 - (E) Answer not known

99. Which of the following is always an ideal of $\mathbb{Z}$ (set of integers)?
- (A) Set of rational numbers (B) Set of natural numbers
 (C) Set of non zero integers (D) Set of even integers
 (E) Answer not known
100. If V is finite-dimensional over F and if $u_1, \dots, u_m \in V$ are linearly independent, then we can find vectors $u_{m+1}, \dots, u_{m+r}$ in V such that
- (A) $u_1, \dots, u_m, u_{m+1}, \dots, u_{m+r}$ is a basis of V
 (B) $u_1, u_2, \dots, u_{m-1}$ is a basis of F
 (C) $u_1, u_2, \dots, u_{m-2}$ is a basis of V
 (D) $u_1, u_2, \dots, u_{m-r}$ is a basis of F
 (E) Answer not known
101. Which one of the following is not true?
- If V is an inner product space, $\forall u, v \in V, \forall \alpha \in F$
- (A) $(u, v) = \overline{(v, u)}$
 (B) $(u, v) = 0$
 (C) $|(u, v)| \leq \|u\| \|v\|$
 (D) $\|\alpha u\| = |\alpha| \|u\|$
 (E) Answer not known

102. A first order equation $y' = f(x, y)$ is said to have the variables separated if f can be in the form

(A) ☒ $g(x)/h(y)$

(B) $g(x/y)$

(C) $g(x, y')$

(D) $g(x)/h/(y')$

(E) Answer not known

103. Regular singular point of the equation

$$2x^2 \frac{d^2 y}{dx^2} + 7x(x+1) \frac{dy}{dx} - 3y = 0 \text{ is}$$

(A) ☒ $x = 0$

(B) $x = 1$

(C) $x = -1$

(D) $x = 2$

(E) Answer not known

104. Which of the following describes an elliptic partial differential equation?

(A) ☒ Solutions describe steady-state processes without time dependence

(B) Solutions exhibit wave like behaviour

(C) Solutions represent diffusion processes over time

(D) Solutions always involve complex valued functions

(E) Answer not known

105. The complementary function of the following P.D.E

$$(D^3 - 4D^2D' - 4DD'^2)z = 2\sin(3x + 2y)$$

- (A) C.F = $\phi_1(x) + \phi_2(x + 2y) + x\phi_3(y + 3x)$
- (B) C.F = $\phi_1(y) + \phi_2(y - 2x) + y\phi_3(x - 3y)$
- (C) C.F = $\phi_1(x) + \phi_2(x + 2y) + y\phi_3(x - 3y)$
- (D) C.F = $\phi_1(y) + \phi_2(y + 2x) + x\phi_3(y + 2x)$
- (E) Answer not known

106. Which of the following statement is not correct?

- (A) Anthropology is the unique science of Man
- (B) Anthropology is the discipline limited only by Man
- (C) Anthropology is the part science of Man
- (D) Anthropology is the science of Man in its totality
- (E) Answer not known

107. _____ said that "social structure can by no means be reduced to the ensemble of social relations to be described in a given community".

- (A) A. R. Radcliffe Brown
- (B) Evans Pritchard
- (C) M. Fortes
- (D) Levi-Strauss
- (E) Answer not known

108. The ways of life including arts, beliefs and institutions of a population that are passed down from generation to generation

- (A) Civilization
- (B) Folklore
- (C) Society
- (D) Culture
- (E) Answer not known

109. The belief that humans are divided into different social groups based on their different spiritual affinities to various plant or animal species is

- (A) Zoomorphism
- (B) Totemism
- (C) Anthropomorphism
- (D) Animatism
- (E) Answer not known

110. The Negroes of Congo Africa are

- (A) Pastoralist community
- (B) Horticultural people
- (C) Hunter - gatherers
- (D) Artisan tribe
- (E) Answer not known

111. _____ is the term used to indicate for the practice where lower caste groups had to provide free labour to landlords in some parts of India?

- (A) Ryotwari system
- (B) Zamindari system
- (C) Jajmani system
- (D) Begars
- (E) Answer not known

112. If in a kinship system, maternal uncle enjoys a pre-eminent place in the life of his nephews and nieces as a matter of convention, the kinship usage is called

- (A) Avunculate
- (B) Matriliney
- (C) Amitate
- (D) Couvade
- (E) Answer not known

113. Kinship where an individual is a member of the mother's descent line is called
- (A) Matriarchal (B) Matrilocal
(C) Feminist (D) ☒ Matrilineal
(E) Answer not known
114. Which of the following statements are true about Max Weber's theory of stratification?
- (i) Social class is based on economically determined relationship to the market
(ii) Status is based on non-economical qualities like honour, prestige and religion
(iii) Party refers to the affiliations in the cultural domain
- (A) (i) only (B) (i) and (iii) only
(C) ☒ (i) and (ii) only (D) (ii) and (iii) only
(E) Answer not known
115. Interview technique is an established data collection technique in social science/social cultural anthropology and is used
- (A) As a substitute for participant observation
(B) ☒ In addition to participant observation
(C) Because participant observation is not a perfect technique
(D) Because all of the above reasons
(E) Answer not known
116. Which is considered as a major component of the research study?
- (A) Interpretation (B) Review of literature
(C) Executive summary (D) ☒ Research report
(E) Answer not known

117. The procedures adopted to undertake an Investigation follow a certain logical sequence is called as
- (A) Controlled (B) Rigorous
(C) Systematic (D) Empirical
(E) Answer not known
118. Hypothesis testing is about making inferences about a population from
- (A) Sample (B) Large sample only
(C) Population parameter sample (D) Small sample only
(E) Answer not known
119. The _____ co-efficient measures the strength of the relationship between a dependent variable and multiple independent variables.
- (A) Rank Correlation (B) Partial Correlation
(C) Multiple Correlation (D) Multiple Determination
(E) Answer not known
120. _____ are popularly used methods of collecting data in research survey.
- (A) Questionnaire and schedule
(B) Investigation and observation
(C) Interview and observation
(D) Enumeration and Interview
(E) Answer not known

121. Arrange in ascending order the following steps of classical methodology of econometric model.

1. Estimation of parameters of the econometric model
 2. Statement of hypothesis
 3. Specification of the econometric model
 4. Specification of the mathematical model
- (A) 2, 3, 1, 4 (B) 2, 1, 4, 3
(C) 2, 4, 3, 1 (D) 3, 1, 4, 2
(E) Answer not known

122. Statistical data which are collected, observed or recorded at successive intervals of time is

- (A) Continuous data
- (B) Cross-Sectional data
- (C) Time series data
- (D) Discrete data
- (E) Answer not known

123. Identify the correlation between the sufficient level of rainfall and the harvest

- (A) Less than one
(B) Greater than one
(C) Equal to zero
(D) Between 0 and -1
(E) Answer not known

124. Correlation coefficient assumes

- (A) ✓ Random variables X and Y are distributed normally
- (B) Random variables X and Y are evenly distributed
- (C) Random variables X and Y are unevenly distributed
- (D) Random variables X and Y are not distributed normally
- (E) Answer not known

125. Which of the following diagram is used to identify the correlation between two random variables?

- (A) Bar diagram
- (B) Pie diagram
- (C) Pictogram
- (D) ✓ Scatter diagram
- (E) Answer not known

126. Find out the formula for student t test

- (A) ✓ $t_{n-1} = \frac{\sqrt{n}(\bar{x} - \mu_0)}{S}$
- (B) $t_{n-1} = \frac{n(\bar{x} - \mu_0)}{S}$
- (C) $t_n = \frac{n-1(\bar{x} - \mu_0)}{S}$
- (D) $t_{n+1} = \frac{\sqrt{n}(\bar{x} - \mu)}{S}$
- (E) Answer not known

127. The sum and the sample average of the OLS residual is

- (A) ✓ Zero
- (B) Greater zero
- (C) Less than zero
- (D) Unity
- (E) Answer not known

128. In a simple linear regression line $Y = \beta_0 + \beta_1 x + u$ the component 'u' is known
- (A) ✓ Error term
 - (B) Variable
 - (C) Slope
 - (D) Intercept
 - (E) Answer not known
129. The percentage value of the coefficient of determination (R^2) is a regression result can be interpreted as
- (A) ✓ Percentage of variation in dependent variable being explained by independent variable(s)
 - (B) Percentage of variations in independent variable(s) being explained by the dependent variable
 - (C) Percentage of variation in exogenous variable(s) being explained by the endogenous variable
 - (D) Percentage of association among exogenous variables
 - (E) Answer not known
130. In log-in model, the slope of coefficient denotes
- (A) ✓ The relative change in Y for absolute change in X
 - (B) The percentage change in Y for a given percentage change in X
 - (C) The absolute change in Y for a percentage change in X
 - (D) The percentage change in Y for a relative change in X
 - (E) Answer not known

131. Classification of management students by field of specification in an example of

(A) ☒ Nominal data

(B) Ratio data

(C) Ordinal data

(D) Internal data

(E) Answer not known

132. The Harmonic mean of 30 and 20 is :

(A) ☒ 24

(B) 20

(C) 30

(D) 28

(E) Answer not known

133. Which is the distribution function for the following density function

$$f_x(x) = 2ae^{-ax}(1 - e^{-ax}) \quad 0 \leq x \leq \infty$$

(A) $1 + 2e^{-ax} + e^{-2ax}$

(B) ☒ $1 - 2e^{-ax} + e^{-2ax}$

(C) $1 - 2e^{-ax} - e^{-2ax}$

(D) $1 - 2e^{ax} + e^{2ax}$

(E) Answer not known

134. When the method of moments is applied β_1 is used as relative measure of skewness where β_1 is defined as

(A) ☒ $\beta_1 = \frac{\mu_3^2}{\mu_2^3}$

(B) $\beta_1 = \frac{\mu_2^3}{\mu_3^2}$

(C) $\beta_1 = \frac{\mu_3}{\mu_2^2}$

(D) $\beta_1 = \mu_2^2 / \mu_3^2$

(E) Answer not known

135. If Binomial random variable has mean = 4 ; variance = 3, then its third central moment μ_3 is :

- (A) $1/2$ (B) $3/2$
 (C) $5/2$ (D) $7/4$
 (E) Answer not known

136. How many million hectares of forested land can hold enough water as large as the reservoir of Bhakra Nangal dam?

- (A) 15 (B) 10
 (C) 5 (D) 20
 (E) Answer not known

137. Match the following :

Author	Book
(a) Kenneth Boulding	1. Population explosion
(b) Paul Ehrlich's	2. The Economics of coming spaceship earth
(c) Hardin's	3. Limits to growth
(d) Club of Rome's	4. Tragedy of commons

- (a) (b) (c) (d)
 (A) 2 1 4 3
 (B) 3 4 1 2
 (C) 4 3 2 1
 (D) 2 3 4 1
 (E) Answer not known

138. Generation of solid wastes has a strong correlation

- (A) between volume of air pollution generated and GNP of the nation
- (B) between volume of water pollution generated and GNP of the nation
- (C) between volume of noise pollution generated and GNP of the nation
- (D) between volume of solid waste generated and GNP of the nation
- (E) Answer not known

139. The term environment has been derived from a _____ word "Environia".

- (A) Latin
- (B) Sanskrit
- (C) French
- (D) Urdu
- (E) Answer not known

140. The Book "The Population Bomb" was written by :

- (A) M.S. Swaminathan
- (B) Paul R. Ehrlich
- (C) G. Arunagiri
- (D) Dr. G. Lido
- (E) Answer not known

141. Which tariff improves the terms of trade of the imposing country?

- (A) Export
- (B) Quota
- (C) Import
- (D) Protection
- (E) Answer not known

142. Fifth conference of Doha Round failed because of

- (A) disagreement on textile subsidies
- (B) disagreement of financial subsidies
- ☒ (C) disagreement on farm subsidies
- (D) disagreement on trade subsidies
- (E) Answer not known

143. Subsidiaries of World Bank are :

- 1. International Development Association
 - 2. International Finance Corporation
 - 3. International Credit Corporation
 - 4. International Currency Association
- ☒ (A) 1 and 2 are correct
 - (B) 2 and 3 are correct
 - (C) 3 and 4 are correct
 - (D) 1 and 4 are correct
 - (E) Answer not known

144. Cluster sampling refers to

- ☒ (A) Sample divided into smaller non overlapping areas and samples are collected randomly
- (B) Samples drawn from large samples
- (C) Samples drawn from census surveys
- (D) Using small samples
- (E) Answer not known

145. Most of the Ex post facto research studies are comes under

- (A) Analytical research studies
- (B) ✓ Descriptive research studies
- (C) Conceptual research studies
- (D) Empirical research studies
- (E) Answer not known

146. $r = -1$ in correlation coefficient is

- (A) Positive correlation
- (B) ✓ Negative correlation
- (C) Zero correlation
- (D) Scattered value
- (E) Answer not known

147. Lowest level of ordered scale is commonly used in

- (A) Ratio scale
- (B) ✓ Ordinal scale
- (C) Interval scale
- (D) Nominal scale
- (E) Answer not known

148. The objective of sensitivity analysis is to find

- (i) How to preserve the solution
 - (ii) To minimize errors
 - (iii) To explore additional solution
 - (iv) To solve the problem with optimal solution
- (A) (i) and (ii) only
 - (B) ✓ (i), (ii) and (iii) only
 - (C) (ii) and (iii) only
 - (D) (i), (ii), (iii) and (iv)
 - (E) Answer not known

149. Which of the following tests are used to detect Heteroscedasticity?

- (i) Durbin Watson d Test
- (ii) Breusch - Godfrey Test
- (iii) Goldfeld Quandt Test
- (iv) Breusch - Pagan - Godfrey Test
- (A) (i), (ii), (iii), (iv) (B) (ii) and (iv) only
- (C) (iii) and (iv) only (D) (i) and (iv) only
- (E) Answer not known

150. When error terms across cross-section data are correlated, it is known as

- (A) Cross correlation (B) Cross autocorrelation
- (C) Spatial autocorrelation (D) Serial autocorrelation
- (E) Answer not known

151. Who defined "public administration is a detailed and systematic application of law"?

- (A) L.D. White (B) Woodrow Wilson
- (C) J.D. Mooney (D) Nicholas Henry
- (E) Answer not known

152. Choose the correct answer

The Book 'Administrative Behaviour' was published in the year

- (A) 1947 (B) 1950
- (C) 1963 (D) 1971
- (E) Answer not known

153. Choose the correct answer

The Book "Dynamic administration" was published in the year

- (A) 1901
- (B) 1921
- (C) 1941
- (D) 1951
- (E) Answer not known

154. Choose the correct answer

The term 'Bureaucracy' was first coined by

- (A) Vincent de Gourney
- (B) Woodrow Wilson
- (C) Max Weber
- (D) Henry Fayol
- (E) Answer not known

155. Choose the right matches among the following

- (i) Brown low committee – 1938
- (ii) First Hoover commission – 1949
- (iii) Second Hoover commission – 1957
- (iv) Bureaucracy – 1745
- (A) (i) and (iv) are correct
- (B) (iii) and (ii) are correct
- (C) (ii) and (iv) are correct
- (D) (i) and (ii) are correct
- (E) Answer not known

156. Concepts in social science research may be classified as _____ and _____.

- (A) ☒ Concrete and abstract
- (B) Concrete and concurrent
- (C) Concurrent and abstract
- (D) Abstract and construct
- (E) Answer not known

157. Which of following is not an objective of research?

- (i) To avoid theoretical understanding
 - (ii) To establish policy guidelines
 - (iii) To gain familiarity with a phenomenon
- (A) ☒ (i) only
 - (B) (ii) only
 - (C) (iii) only
 - (D) (ii) and (iii) only
 - (E) Answer not known

158. _____ deals with the application of the result of a research.

- (A) ☒ Applied research
- (B) Pure research
- (C) Descriptive research
- (D) Explorative research
- (E) Answer not known

159. _____ is a form of systematic inquiry so as to find a solution to some pressing practical problems.

- (A) Pure research
- (B) Participatory research
- (C) ☒ Applied research
- (D) Qualitative research
- (E) Answer not known

160. Which of the following characteristics, a variable should have to be considered as conformed variable?
- (A) It must be related to dependent variable
 - (B) It must be related to independent variable
 - (C) It must be related to both dependent and independent variable
 - (D) It must be random
 - (E) Answer not known
161. _____ is one that varies in amount where as _____ varies in kind.
- (A) Quantitative variables and categorical variables
 - (B) Independent variables and dependent variables
 - (C) Qualitative variables and quantitative variables
 - (D) Categorical variables and qualitative variables
 - (E) Answer not known
162. Which of the following is not a quality of good research?
- (A) Systematic
 - (B) Logical
 - (C) Empirical
 - (D) Flexible
 - (E) Answer not known
163. A diagnostic research design is primarily used to?
- (A) Formulate new ideas
 - (B) Find out the causes of a problem
 - (C) Discussion
 - (D) Determine the variable
 - (E) Answer not known

164. Choose the correct answer

A good hypothesis should be

- (i) Vague
- (ii) Descriptive
- (iii) Clean, specific and testable
- (A) (i) only
- (B) (ii) only
- (C) (iii) only
- (D) (i) and (ii) only
- (E) Answer not known

165. _____ research studies are also termed as formulative research studies.

- (A) Exploratory
- (B) Descriptive
- (C) Diagnostic
- (D) Experimental
- (E) Answer not known

166. Under _____ the first stage may be to select large primary sampling units such as states then districts then towns and families.

- (A) Snow ball sampling
- (B) Simple random sampling
- (C) Multi stage sampling
- (D) Systematic sampling
- (E) Answer not known

167. What potential issue arises when using convenience sampling in social science research?

- (A) It increase the validity of results by selecting participants who are most relevant to the research question
- ☒ (B) It may introduce selection bias and limit the generalizability of the findings
- (C) It ensures a representative sample by considering the entire population
- (D) It requires the most resources and time to conduct
- (E) Answer not known

168. Data obtained in a population census by the office of the registrar General and Census commissioner, Ministry of Home Affairs are examples of

- ☒ (A) Primary data
- (B) Secondary data
- (C) Independent data
- (D) Tertiary data
- (E) Answer not known

169. A questionnaire item that allows the respondent to have complete freedom is

- ☒ (A) Open-ended
- (B) Close-ended
- (C) Indirect
- (D) Direct
- (E) Answer not known

170. _____ method is most suitable for examining a population over an extended period.

- (A) case study
- ☒ (B) longitudinal survey
- (C) cross-sectional survey
- (D) focus groups
- (E) Answer not known

171. Match the following of Leadership theory (List I) with their contributor (List II)

List I		List II
(a)	Managerial Grid	(1) Robert house
(b)	Situational theory	(2) Fielder
(c)	Path Goal theory	(3) Black-Mouton
(d)	Contingency theory	(4) Hersey-Blanchard

	(a)	(b)	(c)	(d)
(A)	1	3	4	2
(B)	3	4	1	2
(C)	2	3	4	1
(D)	4	1	2	3
(E)	Answer not known			

172. Fill up

The concept of opportunity cost was first introduced by _____

- | | |
|----------------------|-------------|
| (A) Davenport | (B) Knight |
| (C) Wieser | (D) Robbins |
| (E) Answer not known | |

173. Choose the right one

The most common model used for Aggregate planning is

- (A) Inventory control model
- (B) Store keeper model
- (C) Non-linear model
- ☒ (D) Linear programming model
- (E) Answer not known

174. Fill in the Blanks

MRP II are classified into the following.

- (a) Top management planning
- (b) Execution as the key for _____.
- ☒ (A) Operation planning
- (B) Low skill planning
- (C) Material planning
- (D) Stores planning
- (E) Answer not known

175. The Principles of working capital management are

- (i) Principle of suitability
- (ii) Principle of sustainability
- (iii) Principle of worthwhileness of investment in working capital
- (iv) Principle of optimisation
- (A) (i) (ii) (iii) are correct
- (B) (i) (ii) (iv) are correct
- ☒ (C) (i) (iii) (iv) are correct
- (D) (ii) (iii) (iv) are correct
- (E) Answer not known

176. Which of the following finance functions are correct?

1. Long-term asset-mix
2. Capital-mix
3. Risk-return trade-off
4. Shareholders wealth

- (A) 1 and 3 are correct (B) 2 and 4 are correct
(C) 1 and 2 are correct (D) 3 and 4 are correct
(E) Answer not known

177. Choose the right answer among the type

The choice of a pricing strategy is dependent on _____.

1. Corporate vision and goals
2. Corporate goals and objectives
3. Customer demand
4. Intensity of inter firm rivalry

- (A) 1 and 3 are correct (B) 1 and 4 are correct
(C) 2 and 3 are correct (D) 2 and 4 are correct
(E) Answer not known

178. Which are the factors affecting human resource planning?

- (i) Organisational growth cycle and planning
- (ii) Remuneration
- (iii) Type and quality of forecasting

- (A) (i) only (B) (ii) and (iii) only
(C) (i) and (iii) only (D) (i) and (ii) only
(E) Answer not known

179. Choose the right answer.

Quality of work life can be increased with.

- (A) Job Rotation, Job Description, Job Analysis, Job Enrichment
- (B) Job Evaluation, Job Enlargement, Employee Involvement, Job Enrichment
- (C) ✓ Job Rotation, Job Enlargement, Job Enrichment, Employee Involvement
- (D) Job Description, Job Analysis, Job Evaluation, Job Enrichment
- (E) Answer not known

180. Expand PIE, used in value creation of strategic management.

- (A) ✓ Potential Industry Earnings
- (B) Potential Intra Earnings
- (C) Potential Inter Earnings
- (D) Potential Independent Earnings
- (E) Answer not known

181. Let f be defined on $[a/b]$; f is of bounded variation on $[a, b]$. If $f = f_1 - f_2$ where f_1, f_2 are increasing functions then we have also $f = (f_1 + g) - (f_2 + g)$ where g is an arbitrary increasing function. The above statement is

- (A) ✓ True always
- (B) False always
- (C) Only when g is strictly increasing
- (D) Only when f_1, f_2 and g are strictly increasing
- (E) Answer not known

182. The total variation of a constant function on an interval $[a, b]$ is

- (A) ☒ 0
- (B) $b - a$
- (C) $a + b$
- (D) 1
- (E) Answer not known

183. If $a = \sum a_n$ and $b = \sum b_n$ are convergent series, then for every pair of constants α and β , the series $\sum (\alpha a_n + \beta b_n)$

- (A) converges to $\alpha + \beta$
- (B) ☒ converges to $\alpha a + \beta b$
- (C) converges to $a + b$
- (D) diverges
- (E) Answer not known

184. If $f(z) = u + iv$ and $u - v = e^x(\cos y - \sin y)$, then $u =$

- (A) $e^x \sin y + c$
- (B) ☒ $e^x \cos y + c$
- (C) $e^x(\cos y - \sin y) + c$
- (D) $e^x(\cos y + \sin y) + c$
- (E) Answer not known

185. Choose the necessary conditions for the value of the integral $\int_{\gamma} \frac{dz}{z-a}$ to be equal to a multiple of $2\pi i$.

- (i) The curve γ is open
 - (ii) The curve γ passes through the point a
 - (iii) The curve γ does not pass through the point a
 - (iv) The curve γ is closed
 - (v) The curve γ is piecewise differentiable
- (A) (i), (ii) and (iv) (B) (i), (iii) and (v)
 (C) (iii), (iv) and (v) (D) (ii), (iv) and (v)
 (E) Answer not known

186. If $f(z)$ is a conformal map and $f'(z_0) = 0$ then which of the following is true?

- (A) f is conformal at z_0
- (B) f preserves angles but not magnitudes at z_0
- (C) f is not conformal at z_0
- (D) f is analytic and conformal at z_0
- (E) Answer not known

187. Let X and Y be normed spaces. If $F : X \rightarrow Y$ is a compact linear map, closure of $F(U)$, where U is unit ball in X , is
- (A) bounded subset of Y
 - (B) ☒ totally bounded subset of Y
 - (C) open subset of Y
 - (D) closed subset of Y
 - (E) Answer not known
188. The collection $T = \{A \subseteq X / A^c \text{ is finite or } A = \emptyset\}$ is called _____ topology.
- (A) ☒ Co-finite
 - (B) Co-countable
 - (C) Lower limit
 - (D) Upper limit
 - (E) Answer not known
189. If $\sum x = 24$, $\sum y = 44$, $\sum xy = 306$, $\sum x^2 = 164$, $\sum y^2 = 574$, $n = 4$, then the regression line x on y is
- (A) $x = 0.241y + 0.86$
 - (B) $x = 0.312y + 0.44$
 - (C) ☒ $x = 0.467y + 0.86$
 - (D) $x = 0.164y + 0.04$
 - (E) Answer not known

190. Consider the following LP with two variables :

$$\text{Maximize } Z = 2x_1 + 5x_2$$

Subject to

$$2x_1 + x_2 \leq 4$$

$$x_1 + 2x_2 \leq 5$$

$$x_1, x_2 \geq 0$$

The optimum solution is obtained at the point

- (A) (1, 2) (B) (4, 5)
(C) (2, 5) (D) (2, 1)
(E) Answer not known

191. Which of the following culture shown complete absence of any kind of case tool?

- (A) Mousterian culture (B) Acheulian culture
(C) Chellean culture (D) Abbevillian culture
(E) Answer not known

192. What does the term Dvija imply?

- (A) It meant the external trade
(B) It stands for victory
(C) It referred to mleccchas
(D) It meant twice born castes
(E) Answer not known

193. The Relo tribal songs of Madhya Pradesh are sung by which tribe?

- (A) Bhil
- (B) Bharia
- (C) Gond
- (D) ☒ Maria
- (E) Answer not known

194. Early Tamil Literature provides evidence of

- (A) ☒ Absence of caste system
- (B) A complex political and economic system
- (C) Growth of Aryan influence
- (D) A rigid caste system
- (E) Answer not known

195. Which fossil was proved to be a hoax

- (A) ☒ Piltdown Man
- (B) Cro-Magnon Man
- (C) Neanderthal Man
- (D) Kennewick Man
- (E) Answer not known

196. Which of the following is relevant to culture change?

- (A) Geographical
- (B) Changes in the modes of Economic Production
- (C) ☒ Inventions and Discoveries
- (D) All of the above
- (E) Answer not known

197. Who authored "the Modernity of Tradition: Political Development in India?"
- (A) M. N. Srinivas (B) Louis Dumont
(C) G. Arunima (D) Rudolph and Rudolph
(E) Answer not known
198. The scheduled caste and Scheduled Tribes Commission 1961 is also known as
- (A) Dhebar Commission (B) Lokur Commission
(C) Elwin Commission (D) Bhuria Commission
(E) Answer not known
199. The Jajmani system represents the
- (A) Relationship between higher and lower castes
(B) Ritualistic superiority of the higher castes
(C) Binary opposition between pure and impure
(D) Functional inter-dependence of different castes in India's villages
(E) Answer not known
200. The assumption that external forces explain the way a society changes and adapts
- (A) Cultural political (B) Political Economy
(C) Economic Culture (D) Cultural materialism
(E) Answer not known
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