Ph. D. (F.T.) Entrance Examination 2026 **Time : 2 Hours**

Do not open this Test Booklet until you are asked to do so. **Maximum Marks : 100**

Immediately fill in the particulars on this page of the Question Booklet and the Answer Sheet with Blue/Black Ball Point Pen. Use of pencil is strictly prohibited.

Name of the candidate (In Capital Letters) : _____

Roll Number (In Figure) : | | | | | | | | | | |

(In Words) : _____

Name of Examination Centre (in Capital Letters) : _____

Candidate's Signature : _____ Invigilator's Signature _____

Important Instructions :

This booklet contains 100 objective type questions. First 50 questions of Research Methodology and Second 50 questions of Subject Specific. Each having four options a, b, c, d.

1. Candidates are not allowed to carry textual material printed or written, bits of papers, pages, mobile phone, electronic device or any other material except the Admit Card inside the Examination Hall/Room.
2. The candidates should fill in the required particulars on the Test Booklet and Answer Sheet with Blue/ Black Ball Point Pen.
3. The candidate should not write their Roll Number anywhere else (except in the specified space) on the Test Booklet/Answer Sheet.
4. Out of the four options given for each question, the candidate must mark one correct option as an answer only.
5. There is no negative marking for any wrong answer.
6. Handle the Test Booklet and Answer Sheet with care, as under no circumstances (except for discrepancy in the Test Booklet Code and Answer Sheet Code), will another set be provided.
7. The candidates are not allowed to do any rough work or writing work on the Answer Sheet. All calculations/writing work are to be done in the space available in the Test Booklet itself.
8. Each candidate must show on demand her Admit Card to the Invigilator.
9. No candidate, without special permission of the Superintendent or Invigilator, should leave her seat.
10. The candidate should not leave the Examination Hall without handing over their Answer Sheet and Test Booklet to the invigilator on the duty and signing the Attendance Sheet.
11. No part of the Test Booklet and Answer Sheet shall be detached under circumstances.

NOTE : THIS BOOKLET SHALL BE RETAINED FOR SIX MONTH ONLY.

(Research Methodology)

1. A researcher has 12,000 households and wants a systematic sample of 600 households. The sampling interval should be:

A. 10
B. 15
C. 20
D. 25

2. Spearman's rank correlation is particularly appropriate when:

A. Variables are ranked/ordinal or assumptions for Pearson correlation are unsuitable
B. Both variables must be nominal
C. The researcher is comparing two means
D. The dependent variable is necessarily binary

3. The Kruskal-Wallis test is a non-parametric alternative to:

A. Independent t-test
B. Paired t-test
C. One-way ANOVA
D. Pearson correlation

4. The Mann-Whitney U test is generally used as a non-parametric alternative to:

A. Paired t-test
B. Independent-samples t-test
C. One-way ANOVA
D. Pearson correlation

5. A complete list of all elements from which a sample is actually drawn is called:

A. Population parameter
B. Research universe
C. Sample statistic
D. Sampling frame

6. Which of the following best distinguishes basic research from applied research?

A. Basic research is always quantitative, whereas applied research is qualitative
B. Basic research primarily develops knowledge/theory, whereas applied research addresses practical problems
C. Basic research uses primary data, whereas applied research uses secondary data
D. Basic research does not require hypotheses

7. A researcher obtains a p-value of 0.03 and uses a 5% significance level. What is the appropriate decision?

A. Reject H0 because $0.03 < 0.05$
B. Accept H0 because $0.03 < 0.05$
C. Reject H1 because $0.03 > 0.01$
D. No decision can be made from the p-value

8. Suppose training increases employee motivation, which subsequently increases productivity. Motivation is best described as:

A. Control variable
B. Intervening variable
C. Extraneous variable
D. Sampling-frame variable

9. A researcher changes or selectively manipulates recorded data so that the results support the hypothesis. This is:

A. Fabrication
B. Falsification
C. Peer review
D. Triangulation

10. A sample mean is 80, population standard deviation is 20 and sample size is 100. Using z=1.96, the approximate 95% confidence interval is:

A. 76.08 to 83.92
B. 78.04 to 81.96
C. 60.00 to 100.00
D. 79.60 to 80.40

11. The principal purpose of a pilot study is to:

A. Produce the final findings
B. Test and refine research procedures and instruments before the main study
C. Replace the sampling process
D. Guarantee external validity

12. Which test is most appropriate for comparing the means of two independent groups when the assumptions of a parametric test are reasonably satisfied?

A. Independent-samples t-test
B. Chi-square test
C. Wilcoxon signed-rank test
D. Kruskal-Wallis test

13. A theoretical framework primarily:

A. Specifies the computer software to be used
B. Replaces the research design
C. Determines the sample size automatically
D. Connects the research problem with relevant theories and concepts

14. A chi-square goodness-of-fit test has four categories. The degrees of freedom are:

A. 2
B. 3
C. 4
D. 5

15. A researcher invents observations that were never actually collected and enters them into the dataset. This is:

A. Plagiarism

B. Fabrication
C. Falsification
D. Self-citation

16. A population contains four strata with sizes 100, 200, 300 and 400. If a proportional sample of 100 is required, the number selected from the third stratum should be:

A. 20
B. 25
C. 30
D. 40

17. A survey records the following frequencies for four response categories: 20, 35, 25 and 20. What is the cumulative frequency after the third category?

A. 55
B. 60
C. 80
D. 100

18. A questionnaire contains 40 items. A researcher removes 8 poorly performing items. What percentage of the original items has been removed?

A. 15%
B. 20%
C. 25%
D. 32%

19. A one-way ANOVA has three groups and 45 total observations. The within-groups degrees of freedom are:

A. 2
B. 3
C. 42
D. 44

20. The primary purpose of research design is to:

A. Determine only the sample size
B. Provide a logical framework for answering the research questions
C. Eliminate the need for data analysis
D. Ensure that every hypothesis is accepted

21. Which design is strongest for establishing a causal relationship between an independent and dependent variable?

A. Descriptive design
B. Historical design
C. Cross-sectional survey
D. Experimental design

22. A sample has a mean of 50 and standard deviation of 10. If the sample size is 100, the standard error of the mean is:

A. 0.1
B. 1
C. 10

D. 100

23. A researcher observes that several studies have examined employee satisfaction but very few have investigated whether satisfaction differs between remote and hybrid employees. This observation primarily helps the researcher identify:

A. Sampling error
B. Type-I error
C. Measurement scale
D. Research gap

24. A one-way ANOVA compares four groups, each containing 10 observations. The total number of observations is 40. The between-groups degrees of freedom are:

A. 3
B. 4
C. 36
D. 39

25. In a regression equation Y=20+3X, an increase of 4 units in X is associated with a predicted increase in Y of:

A. 4
B. 7
C. 12
D. 80

26. Validity primarily concerns:

A. Consistency only
B. Whether an instrument measures what it is intended to measure
C. Sample size
D. Response rate

27. A researcher studies the reasons for unusually high employee turnover in one organisation and recommends immediate changes in its HR policies. This research is most appropriately classified as:

A. Fundamental research
B. Conceptual research
C. Historical research
D. Action research

28. Which source is generally considered a scholarly source?

A. Anonymous social-media post
B. Peer-reviewed journal article
C. Commercial advertisement
D. Unverified blog post

29. Which of the following best represents a research question?

A. Employee motivation is positively related to productivity.
B. To determine whether training improves productivity.
C. Does training intensity influence employee productivity?
D. Training intensity is the independent variable.

30. Snowball sampling is particularly useful when:

A. A complete sampling frame exists
B. The population is hidden or difficult to reach
C. Equal probability selection is mandatory
D. The population is extremely homogeneous

31. A researcher decides in advance to interview 50 male and 50 female consumers but selects participants through convenience. This is:

A. Stratified random sampling
B. Quota sampling
C. Cluster sampling
D. Systematic sampling

32. Which Boolean search string would most effectively retrieve literature concerning both employee engagement and remote work while allowing either term 'employee engagement' or 'work engagement'?

A. employee engagement OR remote work
B. employee engagement AND remote work OR work engagement
C. (employee engagement OR work engagement) AND remote work
D. employee engagement NOT remote work

33. The major conceptual difference between stratified and cluster sampling is that:

A. Stratified sampling is always non-probability sampling
B. Strata are usually internally similar, while clusters are ideally miniature representations of the population
C. Clusters are always smaller than strata
D. Stratified sampling never uses random selection

34. Cronbach's alpha is primarily associated with:

A. Sampling error
B. Internal consistency reliability
C. External validity
D. Normality testing

35. A normal distribution has mean 100 and standard deviation 15. What is the z-score for an observation of 130?

A. 1
B. 1.5
C. 2
D. 2.5

36. A researcher uses Generative AI to help draft a literature review. Which practice is most consistent with responsible research?

A. Submit AI-generated text without verification
B. Assume all AI-generated references are genuine
C. Verify sources, maintain transparency about appropriate AI use, protect confidential data and retain human responsibility for the scholarly work
D. List the AI tool as the sole author of the research paper

37. The main purpose of a research proposal is to:

A. Present only the final statistical results
B. Provide a systematic plan and justification for the proposed research
C. Replace the literature review
D. Guarantee that the hypothesis will be supported

38. In a study, 60 respondents belong to Group A, 90 to Group B and 150 to Group C. What percentage of the sample belongs to Group B?

A. 20%
B. 25%
C. 30%
D. 37.5%

39. A researcher divides employees into departments and randomly selects employees from each department. This is:

A. Cluster sampling
B. Stratified sampling
C. Snowball sampling
D. Convenience sampling

40. If the correlation coefficient between advertising expenditure and sales is r=0.80, the coefficient of determination is:

A. 0.16
B. 0.40
C. 0.64
D. 0.80

41. A questionnaire appears, on superficial inspection, to measure employee satisfaction. This is best described as:

A. Face validity
B. Criterion validity
C. Predictive validity
D. Internal consistency

42. A researcher receives 360 usable responses from 450 distributed questionnaires. The response rate is:

A. 70%
B. 75%
C. 80%
D. 85%

43. A newly developed aptitude test is compared with an established test measuring the same construct. This is evidence most closely related to:

A. Construct validity
B. Face validity
C. Sampling validity
D. Internal validity

44. Increasing sample size generally reduces:

A. Non-sampling error automatically
B. Sampling error
C. Response bias automatically
D. Measurement error automatically

45. For the data 5, 8, 12, 17 and 20, the range is:

A. 12
B. 15
C. 17
D. 20

46. Which question is most clearly open-ended?

A. Are you satisfied? Yes/No
B. Rate satisfaction from 1 to 5
C. What factors influenced your decision to leave the organisation?
D. Do you agree? Strongly agree/Agree/Neutral/Disagree/Strongly disagree

47. Which property distinguishes a ratio scale from an interval scale?

A. Ranking
B. Equal intervals
C. Meaningful absolute zero
D. Categorisation

48. If r= -0.70, the relationship between two variables is:

A. Strong positive
B. Moderate/strong negative
C. Perfect negative
D. No relationship

49. Which of the following is an example of primary data?

A. Data obtained from a published government report
B. Data collected directly by the researcher through interviews
C. Data obtained from an existing journal article
D. Data downloaded from an archival database

50. A researcher receives 270 completed questionnaires out of 360 distributed. If 30 questionnaires are rejected because of missing data, what percentage of distributed questionnaires becomes usable?

A. 60%
B. 66.67%
C. 75%
D. 83.33%

51. Ajrakh is primarily a form of:

A. Embroidery
B. Knitting
C. Appliqué Work
D. Block Printing

52. The "Kalamkari" is a traditional art of which is characterised by:

A. Andhra Pradesh & characterised by Mirror work embroidery
B. Andhra Pradesh & characterised by Hand-painted and block-printed textiles
C. Udisa & characterised by Block printing
D. Tamilnadu & characterised by Hand-painted work

53. Gold and silver embroidery using metallic threads is commonly known as:

A. Kantha
B. Kasuti
C. Zardozi
D. Chikankari

54 . In colour theory, adding white to a hue produces a:

A. Shade
B. Tone
C. Tint
D. Chroma

55. Repetition of visual elements at regular intervals creates:

A. Contrast
B. Rhythm
C. Dominance
D. Proportion

56. Which principle of design creates a visual center of interest?

A. Rhythm
B. Balance
C. Emphasis
D. Unity

57. Which of the following is a cool colour?

A. Red
B. Orange
C. Blue
D. Yellow

58. Which CorelDRAW feature is used to create a three-dimensional effect by extending an object?

A. Blend
B. Extrude
C. Crop
D. Align

59. Which Photoshop feature creates smooth transitions between colours?

A. Brushes
B. Gradients
C. Swatches
D. Masks

60. The Class 101 single thread chain stitch is based on

A. Intralooping
B. Interlooping
B. Interlacing
D. None of these

61. In garment sampling which of the following samples can be made in near substitute material

A. Fit sample
B. Salesman sample
C. Size set sample
D. Preproduction sample

62. The accurate cutting is preferred with

A. Straight knife
B. Band knife

C. Round knife D. Drill

63. The most widely used of all stitch types is

A. Class 100 B. Class 200 C. Class 300 D. Class 400

64. Welted seam is :

A. Superimposed seem B. Lapped seam

C. Bound seam D. Decorative seam

65. Which is not an element of design:

A. Silhouette B. Line C. Colour D. Balance

66. In case of leather or plastics which type of needle will be appropriate?

A. Cutting point B. Ball point C. Set point D. All of these

67. Which sleeve is cut in one piece with the bodice?

A. Raglan sleeve B. Kimono sleeve

C. Set-in sleeve D. Puff sleeve

68. The water repellent fabric can be tested by

A. Drop test B. Sinking time C. Contact angle D. All of these

69. Princess lines are used to:

A. Add decorative stitching B. Provide shaping and fit

C. Create pleats D. Reduce fabric usage

70. Radiating darts spread out from:

A. Waistline B. A single focal point

C. Shoulder seam D. Hemline

71. A company produces garments in sizes 8–16. If each size increment is 2 cm at the bust, what is the total bust difference between size 8 and size 16?

A. 8 cm B. 12 cm

C. 14 cm D. 16 cm

72. Advertising, sales promotion, personal selling, and PR together form:

A. Marketing Strategy B. Promotion Mix

C. Distribution Mix D. Product Mix

73. When analyzing the movement of fashion curves and adoption velocities, which visual representation best explains why fashion styles frequently swing from one design extreme to its complete opposite (e.g., ultra-skinny silhouettes to hyper-baggy voluminous shapes)?

A. The exponential diffusion curve B. The pendulum swing model

C. Linear regression forecasting D. The long-wave economic cycle

74. Nylon 66 fibre is produced through the polymerization of

A. Ethylene Glycol and Terephthalic acid B. Acrylonitrile

C. Caprolactam D. Adipic Acid and Hexamethylenediamine

75. The melt spinning is typically used for the production of ?

A. Acrylic B. Rayon
C. Nylon D. Aramid

76. ---------- fibre has the lowest density.

A. Nylon B. Polyester C. Acrylic D. Polypropylene

77. Micronaire value in cotton measures:

A. Fibre length B Fibre fineness and maturity
C. Fibre strength D. Fibre elasticity

78. Gauge in knitting refers to:

A. Yarn thickness B. Fibre fineness
C. Fabric weight D. Number of needles per inch

79. Appliqué is a technique of:

A. Dyeing fabrics B. Attaching fabric pieces onto a base fabric
C. Printing patterns D. Felting fibres

80. A yarn length of 840 yards weighs 7 grams. What is its cotton count (Ne)?

A. 840 B. 14
C. 64.8 D. 7

81. If warp density = 60 ends/inch and yarn count = 36 Ne, calculate the cover factor (CF).

A. 10 B. 1.66
C. 0.6 D. 2160

82. A yarn has a twist multiplier of 4.0 and a count of 16.0 Ne. What is the twist per inch (TPI)?

A. 4 B. 64
C. 16 D. 8

83. Which instrument is commonly used in CCM to measure colour values?

A. Microscope B. Spectrophotometer
C. Chromatography D. Chromatograph

84. ------ process reduces the nep level in the fibrous material.

A. Blow Room B. Draw frame C. Combing D. Ring spinning

85. Purl is a ---------- structure.

A. Woven B. Nonwoven C. Braided D. Knitted

86. Satin weave produces a fabric with:

A. High strength and diagonal ribs B. Smooth, lustrous surface due to long floats
C. Balanced interlacing of yarns D. Heavy texture with basket effect

87. Basket weave is a variation of:

A. Plain B. Twill
C. Satin D. Jacquard

88. Leno weave is characterized by:

A. Diagonal ribs
B. Warp yarns twisted around weft
C. Long floats
D. Balanced interlacing

89. Fabrics like velvet are produced using:

A. Plain weave
B. Pile weave
C. Twill weave
D. Satin weave

90 Which mechanism is mainly used for shedding?

A. Take-up motion
B. Let-off motion
C. Tappet/Dobby/Jacquard
D. Reed motion

91. Mercerization of cotton increases:

A. Fibre length
B. Lustre and tensile strength
C. Shrinkage
D. Elasticity

92. Wool is extensively dyed with

A. Acid dye
B. Disperse dye
C. Vat dye
D. Direct dye

93. Resin finishing is mainly used to:

A. Increase absorbency
B. Reduce creasing
C. Add colour
D. Remove stains

94. Cotton cannot be dyed with one of the following dyes.

A. Direct dye
B. Vat dye
C. Reactive
D. Acid dye

95. Sanforization is a finishing process that:

A. Control creasing
B. Controls shrinkage
C. Improves elasticity
D. Adds colour

96. If 50 mL of hydrogen peroxide (30% w/v) is diluted to 1 L, what is the final concentration?

A. 1.5%
B. 3%
C. 15%
D. 30%

97. A dyeing trial gave 1.8% shade instead of 2% on 500 g fabric. How much extra dye (in grams) must be added to correct the shade?

A. 1 g
B. 2 g
C. 3 g
D. 4 g

98. In fashion product life cycle a stage in which mass customization takes place is referred to as:

A. Growth
B. Introduction
C. Maturity
D. Decline

99. Which of the following textile material is most static prone:

A. Viscose
B. Nylon
C. Polyester
D. Acrylic

100.When twist of a spun yarn is increased, the strength

A. Does not change
B. Increases
C. Decreases
D. First increases and then decreases