

Seat
No.

PD-07

Total No. of Pages : 11

Shivaji University, Kolhapur
Ph.D. Entrance Examination, February- 2024
Textile Engineering
Sub. Code : 58751

Day and Date : Wednesday, 07-02-2024

Total Marks : 100

Time : 10:00 am to 12:00 noon

Instructions:

- 1) All questions are compulsory.
 - 2) Each question carries 2 marks.
 - 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
 - 4) Use black ball point pen only for marking the circle. Do not make any stray mark on the OMR Answer Sheet.
 - 5) Follow the instructions given on OMR Sheet.
 - 6) Rough work shall be done on the sheet provided at the end of question paper.
 - 7) Only non programmable calculators are allowed.
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Q.1 Six slivers are doubled and given three passages on draw frame. The number of doublings is

- | | |
|--------|--------|
| a. 9 | b. 18 |
| c. 216 | d. 486 |

Q.2 With increase in draft, drafting force

- a. Increases
- b. Decreases
- c. Decreases and then levels off
- d. Increases and then decreases

- Q. 9 Microbes growing on clothing derive nutrition from
- a. Atmospheric oxygen
 - b. Digestion of polymer
 - c. Sweat and contaminants
 - d. Moisture in the air
- Q. 10 Singeing of cotton is carried out to
- a. remove protruding fibres from fabrics surface
 - b. impart luster
 - C. cut long threads from fabric surface
 - d. improve strength
- Q. 11 Wool and silk can be bleached with
- a. Sodium hydrosulphite
 - b. Sodium perborate
 - c. Hydrogen peroxide
 - d. Sodium hypochlorite
- Q. 12 The end groups in PET are
- a. Carboxyl
 - b. Hydroxyl
 - C. Carboxyl and hydroxyl
 - d. Carboxyl and Amino
- Q. 13 The birefringence of nylon 6 fibres is 0.055 and of PET fibre 0.18. State if
- a. both fibres are well oriented
 - b. PET is well oriented but not Nylon 6
 - c. Nylon 6 is well oriented but not PET
 - d. None of the above

- Q.14 The count of a yarn is 20 Tex. It is equivalent to a yarn of
- 29.5 Ne (English count)
 - 160 Denier
 - 65 Nm (Metric count)
 - None of the above
- Q.15 In a spinning mill, fibre bundle strength is preferred over single fibre strength, because
- Bundle strength test is easy and quick
 - It gives less variation
 - It has better correlation with yarn strength
 - It gives benefit of all above three
- Q. 16 During Sizing, the pickup will increase if
- squeeze pressure is increased
 - machine speed is increased
 - temp of drying cylinder is increased
 - temp of drying cylinder is decreased
- Q. 17 A good spliced joint of a ring spun cotton yarn is
- As strong as the parent yarn
 - Stronger than the parent yarn
 - 80 to 90% as strong as the parent yarn
 - Half as strong as the parent yarn
- Q. 18 Loop length of knitted fabric is changed by adjusting
- | | |
|--------------|-----------------|
| a. Throw cam | b. Clearing cam |
| c. Guard cam | d. Stitch cam |

- Q. 19 If 5 grams of oven dry fibre absorbs 1.25 grams of moisture, the moisture regain (MR) and moisture content (MC) of the fibre are
- a. MR =25% and MC = 23.8%
 - b. MR =23.8% and MC = 25%
 - c. MR =23.8% and MC =23.8%
 - d. MR =25% and MC = 20%
- Q. 20 If the 50% span length of a cotton fibre is 13.5 mm and the uniformity ratio is 45%, then 2.5% span length of this fibre in mm would be
- a. 10
 - b. 15
 - c. 30
 - d. 35
- Q. 21 The setting of Poly (ethylene terephthalate) fabric is usually done at
- a. 50 °C
 - b. 100° C
 - c. 150°C
 - d. 200°C
- Q. 22 Dyeing of silk is carried out by using
- a. Disperse dyes
 - b. Acid dyes
 - c. Pigment colours
 - d. None of the above
- Q. 23 Drawing
- a. Decreases birefringence
 - b. Increases birefringence
 - c. Decreases Crystallinity
 - d. Decreases Strength

- Q. 24 Neps on User evenness tester is based on change in mass over a length of
- a. 1 mm
 - b. 2 mm
 - c. 4 mm
 - d. 8 mm
- Q. 25 Twist multiplier (TM) is a better indicator of twist characteristic of yarn than T.P.I because
- a. TM is directly proportional to the tangent of twist angle
 - b. TM describe level of twist in yarn irrespective of linear density
 - c. TM is related to both the above characters
 - d. None of the above
- Q. 26 _____ which concerns with the question of how many items are to be observed and how the information and data gathered are to be analyzed
- a. Statistical design
 - b. Observational design
 - c. Operational design
 - d. Sampling design
- Q. 27 The variables are ones that have a strong continent effect on the relationship between the independent variable and dependent variable. They have potential to modify the direction and magnitude of the above stated association.
- a. Moderating variables
 - b. Inverting variables
 - c. Extraneous variable
 - d. None of the above

Q. 28 _____ involve random selection

- a. Probability sampling
- b. Non-probability sampling
- C. Purposive sampling
- d. None of these

Q. 29 The null hypothesis of the sign test is that

- a. Half the ranks to be less than the median and half greater than the median
- b. Half the ranks to be less than the mean and half greater than the mean
- c. The lower half the ranks to have the same mean as the upper half
- d. The lower half the ranks to have the same standard deviation as the upper half

Q. 30 A research which follows case study method is called

- a. Clinical or diagnostic
- b. Causal
- c. Analytical
- d. Qualitative

Q. 31 Research conducted in class room atmosphere is called

- a. Field study
- b. Survey
- C. Laboratory Research
- d. Empirical Research

Q. 32 ICSSR stands for

- a. Indian Council for Survey and Research
- b. Indian Council for strategic Research
- c. Indian Council for Social Science Research
- d. Inter National Council for Social Science Research.

- Q. 33 Converting a question into a Researchable problem is called
- Solution
 - Examination
 - Problem formulation
 - Problem Solving
- Q. 34 In Testing the statistical hypothesis, which of the following statement is false
- The critical region is the values of the test statistic for which we reject null hypothesis.
 - The level of significance is the probability of type I error
 - The p-value measures the probability that the null hypothesis is true
 - None of the above
- Q. 35 The first step in formulating a problem is
- Statement of the problem
 - Gathering of Data
 - Measurement
 - Survey
- Q. 36 An interval scale contains _____
- Mutually exclusive and collectively exhaustive categories as well as the property of order, but not distance or unique origin
 - The properties of order, classification, and equal distance between points but no unique origin
 - Mutually exclusive and collectively exhaustive categories, but without the properties of order, distance, and origin
 - The properties of classification, order, equal distance, and unique origin

- Q. 37 Second step in problem formulation is
- Statement of the problem
 - Understanding the nature of the problem
 - Survey
 - Discussions
- Q. 38 What is the appropriate test statistic to use to determine the significance of the coefficient of determination in a bivariate regression?
- F statistic
 - Z score
 - X²
 - ANOVA
- Q. 39 Concepts which cannot be given operational definitions are _____ concepts
- Verbal
 - Oral
 - Hypothetical
 - Operational
- Q. 40 A Hypothesis which develops while planning the research is
- Null Hypothesis
 - Working Hypothesis
 - Relational Hypothesis
 - Descriptive Hypothesis
- Q. 41 Which of the following is a non-probability sample?
- Quota sample
 - Simple random sample
 - Purposive sample
 - (a) and (c) both

- Q. 42 In the process of conducting research "Formulation of Hypothesis" is followed by
- Statement of Objectives
 - Analysis of Data
 - Selection of Research Tools
 - Collection of Data...
- Q. 43 One or two tail test will determine
- If the two extreme values (min or max) of the sample need to be rejected
 - If the hypothesis has one or possible two conclusions
 - If the region of rejection is located in one or two tails of the distribution
 - None of the above
- Q. 44 Chi-square test for independence assesses which of the following?
- It assesses whether there is a relationship between two categorical variables
 - It assesses whether there is a relationship between the population and the sample
 - It assesses whether there is a significant difference between two categorical variables
 - It assesses whether there is significant difference between scores taken at time 1 and those taken at time 2
- Q. 45 Conclusions from qualitative research are
- Less certain than from quantitative research
 - Of little practical use.
 - Of descriptive value only.
 - Seldom defensible.

Q. 46 What is the function of a post-test in ANOVA?

- a. Determine if any statistically significant group differences have occurred.
- b. Describe those groups that have reliable differences between group means.
- c. Set the critical value for the F test (or chi-square).
- d. None of the above

Q. 47 Final stage in the Research Process is

- a. Problem formulation
- b. Data collection
- c. Data Analysis
- d. Report Writing

Q. 48 A Research Report is a formal statement of

- a. Research Process
- b. Research Problem
- c. Data collection
- d. Data Editing

Q. 49 A comprehensive full Report of the research process is called

- a. Thesis
- b. Summary Report
- c. Abstract
- d. Article

Q. 50 A short summary of Technical Report is called

- a. Article
- b. Research Abstract
- c. Publication
- d. Guide

