Shivaji University, Kolhapur
Ph.D. Entrance Examination, February- 2024
Computer Application-Faculty of Commerce and Management
Sub. Code : 58844

Day and Date : Wednesday, 07-02-2024
Total Marks : 100
Time : 04:00 pm to 06:00 pm

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.

Choose correct alternative for following questions from given alternatives.

1. Which of the following is NOT a common research method in Information Technology studies?

   A. Surveys   B. Experiments

   C. Literature review   D. Sculpting

2. Which of the following is a qualitative research method?

   A. Surveys   B. Experiments

   C. Case Study   D. Randomized control trial

3. What type of research design involves the repeated measurement of the same subjects over an extended period, with the goal of examining changes or trends over time?

   A. Cross-Sectional   B. Longitudinal

   C. Experimental   D. Case-study

4. A research problem is feasible only when.......

   A. It has utility and relevance

   B. It is new and adds something to knowledge

   C. It is researchable

   D. All of the above

5. Every research problem selected for research must satisfy the following criteria that:

   A. The topic selected should be original or at least less explored

   B. It should be of significance and socially relevant and useful.

   C. Data availability

   D. All of the above

6. What type of sampling technique involves selecting participants based on their unique characteristics or experiences relevant to the research question?

   A. Random Sampling   B. Convenience Sampling

   C. Purposive Sampling   D. Snowball Sampling

7   Which of the following statements about plagiarism is most accurate?

A. It is so easy to "copy and paste" from the internet that everyone does it nowadays. If a proper reference is given, where is the harm in that?

B. How can we say for sure where our own ideas come from exactly? If we tried to give a reference for everything we could never hope to succeed.

C. Any suggestion that we have written what another actually wrote is morally wrong. Anyway, the whole point of a literature review is to show what we have read and what we thought about it.

D. Plagiarism is such an awful crime that those found guilty should be obliged to wear a scarlet "P" on their clothing.

8. What is the major drawback of convenience sampling?

A. Lack of Representativeness

B. High Cost

C. Time-Consuming

D. Complexity

9. Process of obtaining a numerical description of the extent to which a person or object possesses some characteristics is:

A. Measurement   B. Scaling

C. Questionnaire   D. Interview

10. The total percentage of the various components in pie diagram is.....

A. 90   B. 180

C. 360   D. 100

11. Mean deviation can be computed from.....

A. Mean   B. Median

C. Mode   D. All of the above

12. Which of the following are methods for measuring the coefficient of skewness?

    A. Karl Pearsons coefficient of skewness

    B. Bowley's coefficient of skewness

    C. Both (A) and (B)

    D. Neither (A) nor (B)

13. If there are two variables, there can be at most _____ number of regression lines

    A. One   B. Two

    C. Three   D. Infinite

14. If r = 0, the two regression lines are.....

    A. Perpendicular to each other   B. Coincident

    C. Parallel   D. None of these

15. Index numbers are also known as.....

    A. Economic barometer   B. Specialized average

    C. Both (A) and (B)   D. Neither (A) nor (B)

16. Bayes theorem is also known as the formula for the probability of.................

    A. Effects   B. Results

    C. Causes   D. None of these

17. Data which were collected and processed by someone else but are being used in the present study

    A. Primary Data   B. Secondary Data

    C. Historical Data   D. Analyzed Data

18. What is the purpose of a pilot study in research design?

    A. To test the reliability of the instruments

    B. To collect a large sample of data

    C. To analyze the main study's results

    D. To select the research design

19. What is the primary purpose of research design?

    A. To collect data.

    B. To analyze data

    C. To design experiments

    D. To plan and structure the research study

20. The "Discussion" section of a research report is primarily focused on:

    A. Describing the research methodology

    B. Presenting the statistical analyses

    C. Interpreting and explaining the study's results

    D. Summarizing the literature review

21. A research study was carried out to see whether people notice web addresses on television adverts. This is an example of ....

    A. Pure Research   B. Applied Research

    C. Management & Consultancy   D. Web Research

22. If a group of N observations is arranged in ascending or descending order of magnitude, then the middle value is called.............

    A. Mean   B. Median

    C. Mode   D. None of these

23. What is the primary benefit of using cloud computing in research?

    A. Lowering electricity costs

    B. Reducing the need for physical infrastructure

    C. Increasing data security

    D. Eliminating the need for research funding

24. Suppose that a population with N = 200 has μ = 30. What is the mean of the sampling distribution of the mean for sample of size 40?

    A. 40   B. 25

    C. 30   D. None of these

25. What kind of information is usually presented in the limitations section of a research report?

    A. An outline of the extent of the research study

    B. An outline of the factors that may have prevented the researcher from conducting more thorough research

    C. An outline of the historical background of the research study

    D. An explanation of the research tools used to gather the data

26. What is the purpose of the mainloop () function in Tkinter?

    A. It closes the GUI window

    B. It initializes the Tkinter module

    C. It starts the event loop

    D. It imports the necessary widgets.

27. What function is used to open a file for writing in PHP?

    A. fopen()   B. open()

    C. file_open()   D. write_file()

28. Which data structure is used for efficient searching, insertion, and deletion in a dynamic set?

   A. Linked List
   B. Array
   C. Binary Search Tree
   D. Heap

29. What is the purpose of a hash function in hashing?

   A. To generate random numbers

   B. To compress data

   C. To distribute data uniformly in a fixed-size array

   D. To encrypt data

30. What is the key difference between tuples and lists in Python?

   A. Tuples are immutable, while lists are mutable

   B. Tuples can store elements of different data types, while lists cannot

   C. Lists are ordered, while tuples are unordered

   D. Tuples have a fixed size, while lists can dynamically resize

31. Which PHP function is used to establish a connection to a MySQL database?

   A. mysqli_connect()

   B. mysql_connect()

   C. connect_mysql()

   D. pdo_connect()

32. Which of the following is a NoSQL database?

   A. MySQL
   B. MongoDB
   C. PostgreSQL
   D. Oracle

33. In Apache Hive what is the purpose of the Metastore?

   A. Manage metadata and coordinate data storage

   B. Execute MapReduce jobs

   C. Store query results.

   D. Store schema information and table statistics

34. The process of fetching an instruction from memory, decoding it, and executing the operation is known as:

   A. Instruction cycle   B. Pipelining

   C. Clock cycle   D. Cache hit

35. How do you access a specific column in a Pandas DataFrame?

   A. By index   B. By name

   C. By loop   D. Not possible

36. What is the main advantage of using a multilayer feedforward neural network over a single-layer network?

   A. Simplicity and ease of training

   B. Better representation of complex patterns

   C. Faster convergence during training

   D. Reduced risk of overfitting

37. What is the purpose of the implication in fuzzy logic rules?

   A. To combine antecedents and consequents.

   B. To establish causality between fuzzy sets

   C. To determine the degree of membership in the output set

   D. To perform logical operations on fuzzy propositions

38. What does Hibernate provide in terms of database interaction?

    A. A set of Java APIs for creating databases

    B. A way to execute SQL queries directly in Java code

    C. An abstraction layer for mapping Java objects to database tables

    D. A graphical interface for designing database schemas

39. What is the purpose of JSP in Java web development?

    A. To create dynamic web pages using Java code embedded in HTML

    B. To handle database connections in Java applications.

    C. To design graphical user interfaces in Java

    D. To create standalone Java applications

40. Which component is responsible for managing the flow of data between the CPU and other peripherals?

    A. Control Unit   B. ALU

    C. Memory Unit   D. Inpur Unit

41. Which type of JOIN returns all rows when there is a match in one of the tables?

    A. INNER JOIN   B. LEFT JOIN

    C. RIGHT JOIN   D. FULL OUTER JOIN

42. What is the function of the OSI model in networking?

    A. It defines the physical components of a network.

    B. It provides a conceptual framework to understand network interactions.

    C. It specifies the rules for data compression.

    D. It manages network security.

43. What does the term "version control" refer to in software engineering?

   A. Controlling access to software versions

   B. Managing changes to software code and documentation

   C. Versioning software for marketing purposes

   D. Controlling software licenses

44. What is the purpose of a Gantt chart in project management.

   A. To represent the project's workflow

   B. To track project progress over time.

   C. To manage software requirements

   D. To document user feedback.

45. Which technique is commonly used to preprocess and clean large datasets in preparation for analysis?

   A. Data wrangling   B. Data mining

   C. Data partitioning   D. Data shuffling

46. Which cyber security measure involves monitoring and analyzing network traffic for suspicious activities?

   A. Firewall

   B. Intrusion Prevention System (IPS)

   C. Anti-virus software

   D. Honeyd

47. What is the purpose of actuators in IoT devices?

   A. Sensing the environment

   B. Processing data

   C. Controlling physical processes based on data

   D. Providing internet connectivity

48. What is the function of the Virtual Memory in an operating system?

   A. Providing additional storage space for files

   B. Simulating a larger main memory by using secondary storage

   C. Managing network connections

   D. Controlling access to shared resources

49. Which data security concept involves the principle of least privilege?

   A. Encryption   B. Access controls

   C. Backup   D. irewalls

50. Which function is used to create a histogram in R

   A. hist   B. create.hist()

   C. plot.hist()   D. histogram()

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