Seat No.

Ph.D. Entrance Examination-2024-25
COMPUTER SCIENCE AND ENGINEERING
(For M.E./M.Tech. Students)
Sub. Code: 58748

Day and Date : Tuesday 12-11-2024   **Total Marks : 100**

Time : 10.00 a.m. to 12.00 noon

Instructions :

1) All questions are compulsory.

2) Each question carries 2 mark.

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 stary 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.

SECTION-I

1) With reference to sampling, population refers to ....

   A. Total number of residents in a country

   B. Total population of the world

   C. Total number of elements available for a study

   D. None of these

2) The variable that can not take fractional values are called:

   A. Exogenous Variables   B. Exogenous Variables

   C. Discrete Variables   D. Continuous Variables

3) Which is the following is not the component of research problem?

A. Individual   B. Objectives

C. Researcher's Interest   D. Environment

4) When all the elements of population are studied, it is called:

A. Population   B. Universe

C. Sampling design   D. Complete enumeration

5) Which of the following is not a type of measurement scales?

A. Nominal Data   B. Ordinal Data

C. Ratio Data   D. Interval Data

6) When there are two variables in a population, it is called:

A. Univariate population   B. Bivariate population

C. Multivariate population   D. Semivariate population

7) If He is false and decision is Accept Ho then it is called as

A. Type-I   B. Type-II

C. Type-III   D. None of the above

8) .... is also called as false negative

A. Type I error   B. Type II error

C. Type III error   D. None of the above

9) The type of hypothesis that is assumed to be true is

A. Deductive hypothesis   B. Inductive hypothesis

C. Directional Hypothesis   D. Null hypothesis

10) Correlation provides information about the.........

A. Mean value

B. Preakness of curve

C. Scattering of values from the mean

D. Association of variables

11) The type of tests used to study the related smaples:

    A. t test   B. Paired t test

    C. F test   D. Chi-squared test

12) The type of tests used to study the variance:

    A. t test   B. Paired t test

    C. Firest   D. Chi-squared test

13) Two sample sign test is also called ....

    A. One sample sign test   B. Two sample sign test

    C. Paired sign test.   D. None of these

14) Which of following test is used to find out whether the two attributes are associated with each other or not?

    A. Two way ANOVA   B. One way ANOVA

    C. ANOVA   D. Chi-square test of independence

15) Which of the following testing technique is used when the data are classified on the basis of two factors?

    A. One-way ANOVA technique

    B. Two-way ANOVA technique

    C. Three-way ANOVA technique

    D. None of the above

16) Regression model is an example of ....model.

    A. Iconic   B. Analogue

    C. Schematic   D. Symbolic

17) ....include the heading of the report

    A. Title pages   B. Preliminary pages

    C. Table of content   D. Executive summary

18) The data collected from the internet is called as ....

    A. Primary Data   B. Ordinal data

    C. Ratio data   D. Secondary data

19) ..... contains the methodology used in the research and analysis of collected data.

    A. Technical Reports   B. Popular reports

    C. Body of report   D. Table of content

20) Which one of the following is not a population parameter?

    A. Mean   B. Variance

    C. Standard Deviation   D. Binomial distribution

21) The type of tests used to study the differences between the variances of two samples:

    A. T-test   B. Paired t test

    C. F test   D. Chi-squared test

22) There are main .... types of test in hypothesis testing.

    A. 4   B. 3

    C. 2   D. 1

23) .... can come in the starting of the report or in the last part

    A. Information   B. Executive summary

    C. Table of content   D. Primary pages

24) Which type of test is used to study proportion?

    A. t test   B. z test

    C. F test   D. None of these

25) Which of the following refers to the page that contains the list of topics covered in the report?

    A. Table of content   B. Introduction

    C. Primary pages   D. Title pages

SECTION-II

26. If L and - *L* are recursive enumerable then *L* is ....

    A) regular and context-free   B) only context-free

    C) regular and context-sensitive   D) recursive

27. The problem whether the given CFG is finite or infinite is ....

    A) Undecidable   B) NP hard and decidable

    C) NP hard   D) NP complete

28. Which of the following recognizes variable prefixes of the grammar?

    A) DFA   B) NFA

    C) Both NFA and DFA   D) Neither NFA nor DFA

29. Select the most appropriate combination

    A) DFA, Moore, Mealy   B) NFA, Mealy, Moore

    C) DFA, NFA, Moore   D) None of these

30. Paging is a solution to overcome

    A) Internal fragmentation.   B) External fragmentation.

    C) Middle fragmentation   D) Both internal and external fragmentation

31. Paging suffers from the following limitation(s)

    A) Internal fragmentation

    B) External fragmentation.

    C) Middle fragmentation

    D) Both internal and external fragmentation

32. Segmentation is solution to overcome

    A) Internal fragmentation

    B) External fragmentation

    C) Middle fragmentation

    D) Both internal and external fragmentation

33. Segmentation suffers from the following limitation(s)

    A) Both internal and external fragmentation

    B) External fragmentation

    C) Middle fragmentation

    D) Internal fragmentation.

34) Consider a binary search tree .... traversal will result in nodes arranged in ascending order?

    a) Depth First Search   b) Polish

    c) Reverse polish   d) Inorder

35) When the stack is empty, the value of the top of stack (TOS) pointer is

    a) 1   b) 0

    c) -1   d) depends on the memory address

36) In an empty circular queue, the front and rear are?

    a) -1,-1   b) 0,0

    c) 0,1   d) 1, 1

37) Find the roots in the given preorder traversed A B D F G E C H

    a) A   b) B

    c) H   d) G

38) DFS is generalization of.......... traversed.

    a) preorder   b) in - order

    c) level order   d) post-order

39) An algorithm made up to two modules M1 and M2. If time complexities of modules M1 and M2 are h(n) and g(n) respectively, the time complexity of the algorithm is...

    a) mean (h(n), g(n)   b) max (h(n), g(n))

    c) h(n), +g(n)   d) min (h(n), g(n))

40) Which are of the following is not an informal search technique?

a) Hill climbing search   b) AO* search

c) A* search   d) breadth-first search

41) How many edges are there in forest of t-trees containing a total of n vertices?

a) n * t   b) n - t

c) n / t   d) t / n

42) A relational database can be defined as

A) a place to store relational information.

B) a database that relates to different operations.

C) a database to relate the relationship of different databases.

D) a database related to storing of information about humans.

43) The minimal superkeys are called

A) minimum keys.   B) candidate keys.

C) domain keys.   D) optimal keys.

44) Which of the following combinations represents a valid data model?

A) E-R model, network data model, normal form data model

B) Relational data model, hierarchical data model, SQL data model

C) Object-based data model, table data model

D) E-R model, relational data model, object-based data model

45) Which of the following is not a database model?

A) Network database model

B) Relational database model

C) Object-oriented database model

D) Normal form data model

46) HTML is a subset of

A) SGML

B) SGHT

C) STML

D) SHML

47. The format of an HTML document is ....

A) ASCII

B) Special JPEG

C) Special TIFF

D) Special Web

48. The time taken by Internet packets.

A) can be predetermined before transmission.

B) depends upon the size of the packet..

C) is irrelevant for audio packets.

D) is irrelevant for video packets.

49. The DNS maps the IP addresses to

A) a binary address as strings.

B) an alphanumeric address.

C) a hierarchy of domain names

D) a hexadecimal address.

50. Which protocol cannot be used to find the logical address if the server is residing out of your network?

A) ARP

B) RARP

C) BOOTP

D) IGMP

□□□

- Rough -

- Rough -