Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2025

CSS

COMPUTATIONAL BIOLOGY (MACHINE LEARNING)

For office use only

General Instructions

1. The Question Paper is having 100 Objective Questions, each carrying one mark.

2. The answers are to be (✓) 'tick marked' **only** in the "**Response Sheet**" provided.

3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

Time : 2 Hours   **Max. Marks : 100**

To be filled in by the Candidate									
Register Number	in Figures								
	in words								

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Choose appropriate answer from the options in the questions.

(100 × 1 = 100 marks)

1. Find the next number in the sequence:

   2, 6, 12, 20, 30, ?

   A. 42

   B. 45

   C. 52

   D. 60

----

2. What comes next in the following sequence?

6, 24, 60, 120, 210, ?

A. 330 B. 336

C. 340 D. 342

3. Identify the next number in the series?

3, 5, 9, 17, 33, ?

A. 49 B. 57

C. 60 D. 65

4. Choose the term that completes the sequence

   A5Y, E7W, H11T, L13R, ?

   A. O17O   B. O15N
   C. P17P   D. N17M

5. Which of the following continues the logical sequence?

   Infant, Toddler, Child, Adolescent, ?

   A. Elder   B. Teen
   C. Adult   D. Youth

6. "All successful students study hard. Eldho studied hard. Therefore, Eldho is successful". Find the error in logic.

   A. No error   B. Circular reasoning
   C. Affirming the consequent   D. False dilemma

7. "If all apples are sweet, and some sweet things are unhealthy, therefore, apples are unhealthy". Identify the flaw:

   A. Circular reasoning   B. False causality
   C. Invalid deduction   D. Red herring

8. Water : Bottle :: Smoke : ?

   A. Container   B. Pipe
   C. Air   D. Fire

9. Philosopher : Wisdom :: Soldier : ?

   A. Discipline   B. War
   C. Weapon   D. Courage

10. Whisper : Shout :: Nudge : ?

    A. Shove   B. Hit
    C. Shake   D. Strike

11. Seed : Tree :: Idea : ?

    A.   Word   B.   Thought

    C.   Innovation   D.   Action

12. Premise 1 : All machines require oil.

Premise 2 : Some machines are computers.

Conclusion : Some computers require oil.

Which of the following options best describes the logical relationship between the premises and the conclusion?

    A.   Logically valid

    B.   Logically invalid

    C.   Requires more information

    D.   False assumption

13. Read the following statement and identify which assumptions are implicit.

Statement:

"Private firms should be encouraged to adopt villages for sustainable development".

Assumptions:

    I.   Private firms have the capacity to contribute to rural development

    II.   Government alone cannot ensure sustainable development in villages.

    A.   Only Assumption I is implicit   B.   Only Assumption II is implicit

    C.   Both I and II are implicit   D.   Neither I nor II is implicit

14. Read the following statement and identify which assumptions are implicit.

Statement : "The company should reduce product prices to boost failing sales".

Assumption I : The product is currently overpriced compared to customer expectations.

Assumption II : Lower prices will attract more buyers and increase sales volume.

    A.   Only Assumption I is implicit

    B.   Only Assumption II is implicit

    C.   Both I and II are implicit

    D.   Neither I nor II are implicit

15. Read the following statement and identify which arguments are strong.

Statement :

Should AI-based tools be allowed to grade university-level exams?

Arguments:

I.   Yes, it will remove human bias and improve grading speed.

II.   No, machines lack the ability to judge creativity and contextual nuance.

A.   Only I is strong
B.   Only II is strong
C.   Neither I nor II is strong
D.   Both I and II are strong

16. If,

   A + B means A is the brother of B

   A x B means A is the father of B

   A – B means A is the sister of B

   A ÷ B means A is the mother of B

Then what does P + Q ÷ R – S mean?

A.   P is the uncle of S
B.   P is the brother of S
C.   P is the father of S
D.   P is the son of S

17. A is married to B. B is the sister of C. D is the son of C. E is the wife of D. How is A related to E?

A.   Father-in-law
B.   Uncle-in-law
C.   Brother-in-law
D.   Aunt

18. If every 2nd letter of the alphabet starting from B is written in reverse order, which letter will be 7th in this reversed sequence?

A.   P
B.   L
C.   N
D.   R

19. What comes next in the sequence?

2, 3, 5, 9, 17, 33, ?

A.   65
B.   63
C.   64
D.   61

20. Replace each letter with its positions in the alphabet and find the difference between the sum of letters in **LEFT** and **RIGHT**.

    A. 17   B. 18
    C. 19   D. 20

21. There are 24 students in dance class, and the teacher is planning how to arrange them on stage. Sampreetha is 9th form left end of the line while her sister Supreetha is 22nd from the right. How many students are standing between the two sisters?

    A. 4   B. 5
    C. 6   D. 7

22. There's a direction pole at a road intersection that normally points correctly to the four cardinal directions. After strong wind, the pole turns such that the arrow which originally pointed West is now pointing South. Harish, unaware of the change, follows the direction he believes is East. In reality, which direction is he walking in?

    A. South   B. North
    C. West   D. East

23. Sowmya Krishnan walked 20 meters to the north. Then she turned right and walked 30 meters. After that, she turned right again and walked 35 meters. Next, she turned left and walked 15 meters, and finally turned left once more and walked another 15 meters. How far is she from where she started, and in which direction?

    A. 15 m West   B. 30 m East
    C. 30 m West   D. 45 m East

24. In the Central Library in Bangalore, there are 64 history books placed in a single row. The Ancient History book is 25th from the left, and the Medieval History book is 30th from the right. How many books are placed between these two?

    A. 6   B. 7
    C. 8   D. 9

25. Look at the following number series 3, 4, 7, 8, 11, 12, …What number should come next in the sequence?

A. 7
B. 10
C. 14
D. 15

Study the following information carefully and answer the questions given below:

Certain number of persons sit in a straight linear row facing towards north but information about few of them is given. G sits second from an extreme end. Only three persons sit between G and E. B is fifth to the left of R. 6 persons sit between R and E. A, who is third to the left of E, is adjacent to G. 2 persons sit between F and R, who is not at an extreme end. Number of persons to the right of F is same as number of persons between G and A.

26. How many persons sit to the left of B?

A. 9
B. 6
C. 7
D. 5

27. How many persons sit between A and B?

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

28. Information about how many persons is not given?

A. 8
B. 12
C. 9
D. 10

29. Find the odd one out:

A. R
B. E
C. A
D. G

30. What is the position of E with respect to B?

A. Second to the right
B. Second to the left
C. Third to the right
D. Third to the left

31. A train 180 meters long is running at 90 km/h. How long will it take to cross a platform 120 meters long?

    A.   10 sec
    B.   8 sec
    C.   12 sec
    D.   15 sec

32. A lighthouse is situated on top of a cliff 80 meters above sea level. From a ship to sea, the angle of elevation to the top of the lighthouse is 10º. If the lighthouse itself is 20 meters tall, what is the distance from the ship to the base of the cliff?

    A.   465.3 meters
    B.   501.7 meters
    C.   567.2 meters
    D.   632.5 meters

33. A man gives 30% of his income to his wife, 40% of the remaining to his son, and the rest is Rs. 21,000. What was his total income?

    A.   Rs. 50,000
    B.   Rs. 60,000
    C.   Rs. 70,000
    D.   Rs. 75,000

34. A car covers a certain distance in 3 hours at 60 km/h. What should be the speed to cover the same distance in 2 hours 30 minutes?

    A.   72 km/h
    B.   75 km/h
    C.   78 km/h
    D.   80 km/h

35. A shopkeeper marks his goods 40% above the cost price and allows a discount of 10%. What is the profit percentage?

    A.   30%
    B.   26%
    C.   25%
    D.   28%

36. A can finish a piece of work in 15 days, while B can complete the same work in 20 days. If they work together for 4 days, what fraction of the work will still remain?

    A.   1/4
    B.   1/10
    C.   7/15
    D.   8/15

37. A is three times as efficient as B and, because of this, he can complete a job 60 days faster than B can. If they work on the job together, how many days will it take them to finish it?

   A.   20 days   B.   22½ days

   C.   25 days   D.   30 days

38. Two ships are sailing in the sea on opposite sides of lighthouse. From their positions, they observe the top of the lighthouse at angles of 30º and 45º respectively. If the lighthouse is 100 meters tall, what is the approximate distance between the two ships?

   A.   173 m   B.   200 m

   C.   273 m   D.   300 m

39. Two students appeared for an exam. One of them scored 9 marks more than the other. His marks were also 56% of the total marks scored by both students together. What were the marks obtained by each student?

   A.   39, 30   B.   41, 32

   C.   42, 33   D.   43, 34

40. A fruit seller sold 40% of the apples he had. After selling them, he was left with 420 apples. How many apples did he have at the beginning?

   A.   588 apples   B.   600 apples

   C.   672 apples   D.   700 apples

41. A cuboid has dimensions 8 cm x 6 cm x 5 cm. What is its total surface area?

   A.   236 cm^2 B.   238 cm^2

   C.   240 cm^2 D.   242 cm^2

42. A cube has a surface area of 150 cm^2. What is the volume of the cube?

   A.   100 cm^3 B.   125 cm^3

   C.   64 cm^3 D.   216 cm^3

43. What is the volume of cone with a radius of 3 cm and height of 7 cm? (Take π = 22/7)?

   A. 66 cm^3 B. 99 cm^3

   C. 77 cm^3 D. 44 cm^3

44. In how many ways can 5 people be arranged in a straight line if two particular people must to together?

   A. 120   B. 24

   C. 48   D. 60

45. In how many ways can a committee of 3 men and 2 women be selected from a group of 6 men and 5 women?

   A. 120   B. 150

   C. 200   D. None of the above

46. How many different ways can the letters of the word "BANANA" be arranged?

   A. 60   B. 72

   C. 120   D. None of these

47. If the ratio of the present ages of Anu and Basil is 4:5 and after 5 years, their ages will be in the ratio of 5:6. What is the present age of Basil?

   A. 25 years   B. 30 years

   C. 35 years   D. None of the above

48. In a box, the ratio of red to blue balls is 3:4. If there are 63 red balls, how many blue balls are there?

   A. 72   B. 82

   C. 90   D. None of the above

49. The ratio of the lengths of two sides of a rectangle is 5:7. If the perimeter of the rectangle is 240 cm, what is the length of the longer side?

   A. 100 cm   B. 90 cm

   C. 80 cm   D. 70 cm

50. A die is rolled twice. What is the probability of getting a sum of 8?

    A. 5/36   B. 1/9

    C. 1/18   D. None of the above

51. Which of the following shells in most commonly set as the default on most Linux system?

    A. Korn shell   B. C shell

    C. Bourne-Again shell   D. Z shell

52. In the context of Linux, what is the main contribution of the GNU project?

    A. It provides the Linux kernel

    B. It provides system libraries and utilities

    C. It develops the X Window System

    D. It maintains the Linux kernel

53. Which component of the Unix operating system acts as the user's interface for entering commands?

    A. Kernel   B. Shell

    C. Daemon   D. File system

54. Which Unix command can you use to view the current date and time?

    A. Time   B. Date

    C. Today   D. Now

55. Which command will show all files in a directory, including the hidden ones in Unix?

    A. ls –1   B. ls-a

    C. ls-h   D. list

56. Which Unix command is used to count the number of lines in a file?

    A. count –1   B. wc-1

    C. lines -c   D. file –1

57. In HTML, which tag would you use when you want the text to move to a new line without starting a new paragraph?

A. <line>   B. <lb>

C.
                           D. <break>

58. What does the term "client-server architecture" describe in networking?

A. A peer-to-peer network

B. A single user accessing data

C. Clients requesting services from servers

D. Server-side computing only

59. In web technology, what is the significance of a URL?

A. Identifies a browser

B. Links a website to a hosting server

C. Specifies the address of a resource on the web

D. Provides server configuration

60. In HTML5, how do you make sure that a user must fill in a form field before submitting?

A. <input required>

B. <input required = "true">

C. <input validate="required">

D. <input mandatory>

61. Which term is also commonly used to describe a proxy server?

A. Application-level gateway

B. Proxy tools

C. Application proxy

D. None

62. Which device is used to strengthen a weak signal and extend the range of a network?

A. Modem   B. Repeater

C. Switch   D. Router

63. Identify the network device that provides security features to protect data and connections.

A. Modem   B. Router

C. Both A and B   D. None of the above

64. Identify the type of network that connects over long distances using telephone lines.

A. WAN   B. LAN

C. WWAN   D. Wireless

65. In a LAN setup, which device allows users to access and share programs and files?

A. File server

B. Network

C. Communication server

D. Print server

66. What is the purpose of the HTTP status code 301?

A. Resource not found

B. Permanent redirect

C. Internal server error

D. Unauthorized access

67. The Just-In-Time (JIT) compiler is primarily used in which programming context?

A. Static linking

B. Web Assembly

C. Java Virtual Machine

D. Text editor

68. Which type of IP address is 127.0.0.1?

    A.   Public IP

    B.   Loopback IP

    C.   Broadcast IP

    D.   Subnet gateway

69. Ethernet is defined under which IEEE standard?

    A.   802.11   B.   802.3

    C.   802.15   D.   802.1X

70. IRC stands for _____.

    A.   Internet Radio Community

    B.   Internet Radio Company

    C.   Internet Relay Chat

    D.   Internet Relay Chart

71. An IP address that starts with 192.168 is classified as:

    A.   Public IP   B.   Dynamic IP

    C.   Private IP   D.   Static IP

72. The role of the symbol table in a compiler is to

    A.   Store source code

    B.   Translate code

    C.   Track scope and types of identifiers

    D.   Optimize code

73. In the context of search engines, what does 'SEO' stand for?

    A.   Software Engineering Optimization

    B.   Server Engine Optimization

    C.   Search Engine Optimization

    D.   Search Efficiency Operation

74. What does the acronym 'ccTLD' stand for?

    A.   Country Code To-Linked Domain

    B.   Country Code Top-Level Directory

    C.   Country Code Top-Level Domain

    D.   Centralized Code Territor-Locator Domain

75. Which of the following is an example of a URL fragment?

    A.   ?id=123   B.   index.html

    C.   #about   D.   :443

76. Which protocol is used by FTP to ensure secure data transfer?

    A.   HTTP   B.   HTTPS

    C.   ARP   D.   SSL/TLS

77. Which DNS record type is used to map a domain to an IPv6 addess?

    A.   AAAA   B.   A

    C.   NS   D.   PTR

78. Which browser first implemented tabbed browsing?

    A.   Internet Explorer   B.   Mosaic

    C.   Opera   D.   Netscape Navigator

79. What is the full form of CSMA?CD in computer networks?

    A.   Carrier Sense Management Access with Collision Detection

    B.   Carrier Signal Multiple Access with Collision Detection

    C.   Carrier Sense Multiple Access with Collision Detection

    D.   Control Sense Multiple Access with Collision Detection

80. What is the full form of ICANN?

    A.   Internet Corporation for Assigned Network Names

    B.   International Council for Assigned Numbers and Names

    C.   Internet Corporation for Assigned Names and Numbers

    D.   International Committee for Assigned Numbers and Networks

81. An Interpreter is:

    A. program that generates an object program from a program written in a high-level language

    B. The program that converts assembly code to machine language automatically

    C. A program that loads programs into memory and gets them ready to run

    D. is a program that appears to execute a source program as if it were machine language

82. What will be the output of the following C code?

    #include<stdio.h>

    Int main()

    {

    int a = 1, b = 2, c = 3, d = 4, x;

    c = c + d = b * a;

    printf("%d, %d\n", x, d);

    }

    A. Syntax error   B. 5, 2

    C. 7, 2   D. 7, 4

83. How is search done when the statements #include and #include "library.h" is included in C program?

    A. When former is used, current directory is searched and when latter is used, standard directory is searched

    B. When former is used, standard directory is searched and when latter is used, current directory is searched

    C. When former is used, search is done in implementation defined manner and when latter is used, current directory is searched

    D. For both, search for 'library' is done in implementation-defined places

84. C has how many pointers (*) against a pointer variable declaration?

    A. 7   B. 127

    C. 255   D. No limits

85. What will be the output of the following block of code?

    ```
    Int fun(char*str1)
    {
        Char *str2 = str1;
        while (*++str1)
        ;
        return (str1 – str2);
    }
    int main()
    {
        Char*str="GeeksQuiz";
        Printf("%d", fun(Str));
        Return 0;
    }
    ```

    A. 10   B. 9

    C. 8   D. Random number

86. Given that a = 7.5, b = -1.0, m = 1.0, n = 2.0 the value of - - a + b = a>m> = n is:

    A. 0   B. 1

    C. 2   D. 3

87. What is an RDBMS made of?

    A. Collection of Records

    B. Collection of Keys

    C. Collection of Tables

    D. Collection of Fields

88. _____ is a collection of one or more features used to uniquely identify a record.

   A. Primary key   B. Foreign key

   C. Super key   D. Candidate key

89. Which of the following set should be associated with weak entity set for weak entity to be meaningful

   A. Neighbour set

   B. Strong entity set

   C. Owner set

   D. Identifying set

90. Among the following which is a procedural language?

   A. Domain relational calculus

   B. Tuple relational calculus

   C. Relational algebra

   D. Query language

91. Which normal form deals with multivalued dependency?

   A. 1NF   B. 2NF

   C. 3NF   D. 4NF

92. Which of the following query can replace the original query given below?

   SELECT name, emp-id

   FROM professor, instructs

   WHERE professor_ID=instruct_ID;

   A. Select name, emp_id from professor natural join instructs;

   B. Select name, emp_id from instructs, professor where professor_id

   C. Select name, emp_id from professor;

   D. Select, emp_id from professor join instructs;

93. Which model uses a tree structure to represent relationships among date?

    A.   Relational Model

    B.   Network Model

    C.   Hierarchical Model

    D.   Object – Oriented Model

94. Which of the following ensures that database transactions are error-free?

    A.   Concurrency Control

    B.   Transaction Control

    C.   Data integrity

    D.   Backup Management

95. In E-R model, A is the dominant entity and B is subordinate entity

    A.   If A is deleted, then B is also deleted

    B.   If A is deleted, then B is not deleted

    C.   If B is deleted, then A is also deleted

    D.   None of the above

96. Which of the following are heuristic search algorithms?

    A.   Best First Search Algorithm

    B.   A* algorithm

    C.   Both A and B

    D.   None of these

97. What is the role of regularization in machine learning models?

    A.   To increase model complexity

    B.   To decrease model complexity

    C.   To speed up model training

    D.   To increase bias

98. Which among the following is the difference between precision and recall?

    A.   Both measure the same thing

    B.   Precision focuses on false positive and recall focuses on false negatives

    C.   Precision focuses on false negatives and recall focuses on false positive

    D.   Precision and recall are unrelated metrics

99. What do you mean by over fitting in context of machine learning models?

    A.   Fitting a model with insufficient data

    B.   Fitting a model too closely to the training data

    C.   Fitting a model with too few features

    D.   Fitting a model to the validation set

100. What is the use of activation functions in neural networks?

    A.   Defines the learning rate

    B.   Sets the number of neurons in each layer

    C.   Introduces non-linearity to the model

    D.   Controls the initialization of weights

_____

RESPONSE SHEET

1 A B C D E	26 A B C D E	51 A B C D E	76 A B C D E
2 A B C D E	27 A B C D E	52 A B C D E	77 A B C D E
3 A B C D E	28 A B C D E	53 A B C D E	78 A B C D E
4 A B C D E	29 A B C D E	54 A B C D E	79 A B C D E
5 A B C D E	30 A B C D E	55 A B C D E	80 A B C D E
6 A B C D E	31 A B C D E	56 A B C D E	81 A B C D E
7 A B C D E	32 A B C D E	57 A B C D E	82 A B C D E
8 A B C D E	33 A B C D E	58 A B C D E	83 A B C D E
9 A B C D E	34 A B C D E	59 A B C D E	84 A B C D E
10 A B C D E	35 A B C D E	60 A B C D E	85 A B C D E
11 A B C D E	36 A B C D E	61 A B C D E	86 A B C D E
12 A B C D E	37 A B C D E	62 A B C D E	87 A B C D E
13 A B C D E	38 A B C D E	63 A B C D E	88 A B C D E
14 A B C D E	39 A B C D E	64 A B C D E	89 A B C D E
15 A B C D E	40 A B C D E	65 A B C D E	90 A B C D E
16 A B C D E	41 A B C D E	66 A B C D E	91 A B C D E
17 A B C D E	42 A B C D E	67 A B C D E	92 A B C D E
18 A B C D E	43 A B C D E	68 A B C D E	93 A B C D E
19 A B C D E	44 A B C D E	69 A B C D E	94 A B C D E
20 A B C D E	45 A B C D E	70 A B C D E	95 A B C D E
21 A B C D E	46 A B C D E	71 A B C D E	96 A B C D E
22 A B C D E	47 A B C D E	72 A B C D E	97 A B C D E
23 A B C D E	48 A B C D E	73 A B C D E	98 A B C D E
24 A B C D E	49 A B C D E	74 A B C D E	99 A B C D E
25 A B C D E	50 A B C D E	75 A B C D E	100 A B C D E

ROUGH WORK

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