101/2024

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Who wrote the book *Historia Da Malabar*?
   (A) Shaikh Zainudin
   (B) Diogo Gonsalves
   (C) Joeph Kathanar
   (D) William Logan

2. Which revolution can be considered as the result of intellectual Enlightenment?
   (A) French Revolution
   (B) Revolution in England
   (C) Chinese Revolution
   (D) Russian Revolution

3. Who provided Solar Panel Substrates for Chandrayan-3?
   (A) SAC, Ahmedabad
   (B) NRSC, Hyderabad
   (C) VSSC, Trivandrum
   (D) ISTRAC, Bangalore

4. Which one of the following statement is/are correct about Inversion of Temperature?
   (i) There is an increase in temperature with an increase of elevation
   (ii) Absence of winds and clear skies are ideal for a Temperature Inversion
   (iii) Cold dry air is an ideal condition for a Temperature Inversion
   (iv) Snow covered earth is not an ideal condition for a Temperature Inversion
   (A) (i) and (iv) only are correct
   (B) (i) and (ii) are not correct
   (C) (iii) and (iv) are correct
   (D) (i), (ii) and (iii) are correct

5. Match the following and find correct option :

	A	B
(i)	The central mass of Earth	Nife
(ii)	The outer rock shell of Earth	Lithosphere
(iii)	Discontinuity between Crust and Mantle	Mohorovicic
(iv)	Sima Layer	Pyrosphere

   (A) (i), (ii) and (iv) are correct
   (B) (ii), (iii) and (iv) are correct
   (C) (i) and (iii) are correct
   (D) All the above options are correct

6. The theme of World Environment Day 2024 is :
   (A) Beat Plastic Pollution
   (B) Only One Earth
   (C) Our Land Our Future
   (D) Ecosystem Restoration

A

3

[P.T.O.]

7. What is the aim of 'Vocal for Local' initiative of NITI Aayog?
   (i) Bolstering local economies
   (ii) Fostering grassroots entrepreneurship
   (iii) Improvement in local communication system
      (A) Only (iii)   (B) Only (i) and (ii)
      (C) All of the above (i), (ii) and (iii)   (D) Only (i)

8. Which of the following is not a benefit of first green revolution?
      (A) Improvement in horticulture and floriculture
      (B) Increase in food grain output
      (C) Increased income of the rural people
      (D) Encouragement of multiple cropping

9. Which are the central taxes that are subsumed in GST?
   (i) Union excise duties from non-petroleum products
   (ii) Corporate tax
   (iii) Service Tax
      (A) Only (ii)   (B) Only (i)
      (C) Only (i) and (iii)   (D) All of the above

10. Which Article of the Indian Constitution deals with the establishment of Grama Panchayats?
      (A) Article 243A   (B) Article 243B
      (C) Article 243G   (D) Article 243Z

11. Which of the following initiative by government of India is to provide an online marketing platform for women entrepreneurs?
      (A) Mahila E-haat   (B) Mahila E-waat
      (C) Mahila E-maat   (D) Mahila E-vaat

12. Who was the Provisional President of the Constituent Assembly before Dr. Rajendra Prasad took over?
      (A) Dr. B.R. Ambedkar   (B) C. Rajagopalachari
      (C) Dr. Sachidananda Sinha (D) T.T. Krishnamachari

13. Who is the executive authority to advice the Union Government on legal matters and perform other duties of legal character?
      (A) Advocate General   (B) Attorney General
      (C) Comptroller and Auditor General   (D) Supreme Court

14. As per Article 279A of Indian Constitution, who acts as the chairperson of GST Council of India :
    (A) Prime Minister
    (B) Minister of Industry
    (C) Minister of Commerce
    (D) Union Minister of Finance

15. 73rd Amendment of the Constitution of India related to which among the following?
    (A) Municipalities
    (B) Panchayat
    (C) Nagarapalika
    (D) Township

16. Which of the following is included in the preamble of Indian Constitution in our Constituent Assembly?
    (A) 29th day of 1949
    (B) 29th day of 1950
    (C) 26th day of 1949
    (D) 26th day of 1950

17. Which act was passed in 2012 deals with issues of sexual offenses against children?
    (A) POCSO
    (B) POSCO
    (C) POXCO
    (D) POCXO

18. "May all be happy" is the motto of which commission?
    (A) SHRC
    (B) UDHR
    (C) NHRC
    (D) All of the above

19. What do you mean by an attosecond?
    (A) 10^{-18} second
    (B) 10^{-16} second
    (C) 10^{-14} second
    (D) 10^{-12} second

20. Which type of force given below is the weakest force?
    (A) Strong Nuclear Force
    (B) Weak Nuclear Force
    (C) Electromagnetic Force
    (D) Gravitational Force

21. What is the approximate distance of the periodic Halo orbit of the Aditya-L1 spacecraft from Earth?
    (A) 1.5 Million kilometres
    (B) 1.5 Billion kilometres
    (C) 1.5 Trillion kilometres
    (D) 1.5 Quadrillion kilometres

22. Which of the following functional group is present in an alkaloid structure?
    (A) Amine
    (B) Carboxylic acid
    (C) Amide
    (D) Ketone

23. What is the constant in ideal gas equation?
    (A) Pressure constant
    (B) Boltzmann constant
    (C) Temperature constant
    (D) Universal Gas constant

24. The Nobel Prize in Chemistry was granted for the research on Quantum dots, which are commonly used in QLED technology to enhance which of the following aspects?
   (A) Contrast ratio
   (B) Speaker quality
   (C) Touch sensitivity
   (D) Battery life

25. Which vitamin is involved in the regulation of calcium and phosphorus homeostasis in the body?
   (A) Vitamin K
   (B) Vitamin D
   (C) Vitamin B12
   (D) Vitamin E

26. Which initiative in Kerala focuses on providing free health care services to the underprivileged?
   (A) Arogya Keralam
   (B) Ayushman Bharat
   (C) Nava Kerala Mission
   (D) Kudumbashree

27. Which cells are responsible for producing the myelin sheath in the central nervous system and peripheral nervous system?
   (i) Schwann cells
   (ii) Oligodendrocytes
   (iii) Neuron
   (iv) Microglia
   (A) Only (i) and (iv)
   (B) Only (i)
   (C) Only (i) and (ii)
   (D) Only (ii)

28. Which is the merit of Dot Matrix Printer?
   (A) Other language print
   (B) Not expensive
   (C) Used Widely
   (D) All of them

29. Device that helps prevent congestion and data collisions :
   (A) Hub
   (B) Gateway
   (C) Switch
   (D) Proxy Server

30. Which of the following DDoS in mobile systems wait for the owner to trigger the cyber attack?
   (A) Worms
   (B) Virus
   (C) Botnets
   (D) Programs

31. According to Maslow, the hierarchy of needs does not include :
   (A) Psychological needs
   (B) Safety needs
   (C) Self-actualization needs
   (D) Physiological needs

32. Who wrote the book named "human side of the enterprise"?
- (A) Henry Fayol
- (B) Charles Babbage
- (C) Douglas Mc Gregor
- (D) Peter F Drucker

33. Who is the present chairman of RBI?
- (A) Gita Gopinath
- (B) Raghuram Rajan
- (C) Shaktikanta Das
- (D) Urjit Patel

34. Under the SEBI (Issue of capital and disclosure requirements) regulations, which one is not a method for issuing securities?
- (A) Right Issue
- (B) Bonus Issue
- (C) Insider Trading
- (D) Initial Public Offer

35. Which of the following stock exchange has its index named as "Sensex"?
- (A) Calcutta stock exchange
- (B) National stock exchange
- (C) London stock exchange
- (D) Bombay stock exchange

36. According to which assumption assets are shown in the accounting records at cost less depreciation?
- (A) Going Concern Concept
- (B) Business Entity Concept
- (C) Money Measurement Concept
- (D) Matching Concept

37. Who among the following stated that "coordination is the essence of management"?
- (A) Koontz and O'donell
- (B) F.W. Taylor
- (C) Peter F Drucker
- (D) Henry Fayol

38. Which Banks merged in Bank of Baroda on 1ˢᵗ April, 2019?
- (A) Union Bank of India and United Bank of India
- (B) Oriental Bank of Commerce and United Bank of India
- (C) Vijaya Bank and Dena Bank
- (D) Indian Bank and Allahabad Bank

39. Who coined the concept of management accounting?
- (A) R.N. Carter
- (B) James H Bliss
- (C) Peter F Drucker
- (D) F.W. Taylor

40. Which one of the following means the harmonising or synchronising of individual efforts with the purpose of achieving group goals?
- (A) Coordination
- (B) Control
- (C) Decision making
- (D) Delegation

41. The value of $\dfrac{43}{1000}$ in decimal fraction is :

    (A) 0.0430   (B) 0.0034

    (C) 0.4300   (D) 0.0043

42. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is :

    (A) 15   (B) 16

    (C) 30   (D) 25

43. George deposited Rs. 15,000 in a bank, where compound interest is 10% per annum compounded annually. How much interest will he get after 2 years?

    (A) Rs. 3,150   (B) Rs. 1,500

    (C) Rs. 3,000   (D) Rs. 3,350

44. The average of 50 members is 38. If the two numbers, 45 and 55 are discarded the average of the remaining numbers will become?

    (A) 36   (B) 36.5

    (C) 37   (D) 37.5

45. Among $2^{\frac{1}{3}}$, $3^{\frac{1}{4}}$, $5^{\frac{1}{6}}$, $6^{\frac{1}{12}}$ which one is greater?

    (A) $6^{\frac{1}{12}}$ (B) $3^{\frac{1}{4}}$

    (C) $2^{\frac{1}{3}}$ (D) $5^{\frac{1}{6}}$

46. Find the next number in the series 8, 27, 64, 125.

    (A) 150   (B) 256

    (C) 216   (D) 212

47. If '−' stands for division, '+' stands for multiplication, '÷' stands for subtraction and '×' stands for addition, then $6 \div 20 \times 12 + 7 - 1 = ?$

    (A) 57   (B) 38

    (C) 62   (D) 70

48. If the water image of the clock shows 3 hours 25 minutes, then what will be the actual time?

    (A) 3 hours 5 minutes   (B) 3 hours 55 minutes

    (C) 3 hours 35 minutes   (D) 3 hours 45 minutes

49. In a certain code language FRIEND is written as UIRVMW, then how is TRADER will be written in that code language?

    (A) WMVRIU   (B) GIZWVI

    (C) GIZVIW   (D) GZIWIV

50. On 5th December 1993, Lakshmi and Mohan celebrated their anniversary on Monday. What will be the day on their anniversary in 1997?

    (A) Sunday   (B) Tuesday

    (C) Saturday   (D) Friday

51. He drives the car very —————.
  (A) Fast
  (B) Rapid
  (C) Fastly
  (D) Quick

52. They shifted all their ————— in a single day.
  (A) furnitures
  (B) furniture
  (C) furnishing
  (D) equipments

53. Please pass the rice, —————?
  (A) should you
  (B) did you
  (C) may you
  (D) will you

54. The word that is correctly spelled is :
  (A) Blasfemous
  (B) Blasphemous
  (C) Blasmefaous
  (D) Blasephmous

55. My friend and my brother ————— studying in my college.
  (A) are
  (B) will
  (C) is
  (D) may

56. Next week we ————— our examinations.
  (A) will had
  (B) would had
  (C) are having
  (D) were having

57. A suitable antonym for the word "Obnoxious" is:
  (A) Unpalatable
  (B) Pleasant
  (C) Detestable
  (D) Revolting

58. She divided the money ————— her two children.
  (A) between
  (B) among
  (C) amongst
  (D) besides

59. Which is the most appropriate passive form of the sentence, "Nobody invited me"?
  (A) Nobody has invited me
  (B) Nobody was invited by me
  (C) I was not invited by nobody
  (D) I was not invited by anybody

60. The most suitable meaning of the word "Carte Blanche" is :
  (A) Unlimited authority
  (B) Restricted access
  (C) Existing condition
  (D) Established fact

61. Which of the following statements is/are TRUE regarding the IDE and SATA interfaces?

(i) IDE cables hinder proper airflow inside the system chassis

(ii) IDE sata transfer is parallel whereas SATA data transfer is serial

(iii) IDE always performs faster than all versions of SATA

(iv) IDE has master-slave arrangements whereas SATA does not have such distinction

    (A) Only (i), (ii) and (iv)

    (B) Only (ii) and (iii)

    (C) Only (i) and (ii)

    (D) All of the above (i), (ii), (iii) and (iv)

62. Which of the following methods access the memory bus and bypass the CPU for the transfer of data between the CPU and peripheral devices?

(i) DMA

(ii) Programmed I/O

(iii) Interrupt driven I/O

    (A) Only (i)   (B) Only (i) and (iii)

    (C) Only (ii)   (D) Only (iii)

63. Read the following statements and find the correct sequence of instruction execution :

(i) Fetch the operands from memory

(ii) Calculate the effective address

(iii) Execute the instruction

(iv) Decode the instruction

(v) Fetch the instruction from memory

(vi) Store the result in the proper place

    (A) (v), (i), (ii), (iv), (iii), (vi)   (B) (ii), (v), (iv), (i), (iii), (vi)

    (C) (ii), (i), (v), (iii), (iv), (vi)   (D) (v), (iv), (ii), (i), (iii), (vi)

64. Which one of the following is NOT a motherboard form factor?

    (A) ATX   (B) BTX

    (C) FTX   (D) ITX

65. Which one of the following will NOT be a standard ATX power supply output voltage?

(A) +12 V

(B) +5 V

(C) −3 V

(D) −12 V

66. Which of the following statements is FALSE about a firewall?

(i) Firewall prevents unauthorized access and malicious packets from entering the network

(ii) Firewall works based on a set of defined inbound and outbound rules

(iii) Firewall can prevent the threats caused by software and application flaws inside the computer

(A) Only (i)

(B) Only (iii)

(C) Only (ii) and (iii)

(D) Only (i) and (ii)

67. Which of the following is/are NOT a symptom for CMOS battery failure?

(i) Fail to detect the basic peripherals such as keyboard and monitor

(ii) Incorrect or slow system date and time in the BIOS

(iii) Loss of customized settings in the BIOS

(iv) Continuous non stop beep sound when switching on the computer

(A) Only (i) and (ii)

(B) Only (iii) and (iv)

(C) Only (i) and (iv)

(D) Only (ii) and (iii)

68. Which of the following is a laser printer problem?

(A) White lines caused by clogged nozzles that aren't dispensing ink

(B) Dark vertical lines caused by defective toner cartridges

(C) Printer carriage moves and the printer makes noise but nothing is printed caused by dried ink ribbon

(D) None of the above

69. Consider the following set of processes, with the length of the CPU burst given in milliseconds :

Process	Burst Time
P1	6
P2	8
P3	7
P4	3

What will be the average waiting time if the process scheduling follows a non preemptive SJF scheduling?

    (A) 7 milliseconds   (B) 6 milliseconds

    (C) 10.25 milliseconds   (D) 4 milliseconds

70. Given four conditions about processes and resources :

(i)   Mutual exclusion

(ii)   Hold and wait

(iii) No preemption

(iv) Circular wait

Which one of the following has to be TRUE for a deadlock to happen?

    (A) Only the Condition (iv) needs to occur

    (B) Only the Conditions (iii) and (iv) need to occur simultaneously

    (C) Only the Conditions (ii) and (iv) need to occur simultaneously

    (D) All the Conditions need to occur simultaneously

71. Which of the following is/are TRUE regarding memory allocation?

(i)   External fragmentation occurs when the available free space is fragmented into a large number of small Holes

(ii)   Internal fragmentation occurs in fixed memory partitions when the memory allocated to a process may be slightly larger than the requested memory

(iii) External fragmentation can be solved by compaction only if the relocation is static

    (A) Only (i) and (iii)   (B) Only (i)

    (C) Only (iii)   (D) Only (i) and (ii)

72. "The disk arm starts at one end of the disk and moves toward the other end, servicing requests as it reaches each cylinder, until it gets to the other end of the disk. At the other end, the direction of head movement is reversed and servicing continues". Which one of the following disk scheduling algorithms is mentioned here?

    (A) LOOK   (B) SCAN

    (C) FCFS   (D) SSTF

73. Name the RAID level in which the striped data blocks are stored in different disks and the parity information is distributed into these disks?

    (A) RAID Level 5   (B) RAID Level 3

    (C) RAID Level 2   (D) RAID Level 1

74. Which of the following statements is FALSE regarding storage devices?

    (A) SSD uses NAND flash memory to store data

    (B) SAS storage is best suited for servers, storage arrays and workstations which need high availability and low latency

    (C) NVMe technology is interfaced through SATA bus

    (D) HDDs consume great power and mostly suffer from mechanical failure

75. Which of the following backup scenarios is/are TRUE?

    (i)   When full backup is used, the most recent copy of the backup file is needed to restore all of the files

    (ii) Incremental backup requires a full backup as base as well as all the incremental backup sets to restore the files

    (iii) Differential backup requires a full backup as base as well as the last the differential backup sets to restore the files.

    (A) Only (i)   (B) Only (ii)

    (C) Only (iii)   (D) All the above (i), (ii) and (iii)

76. Which of the following is not a valid subnet mask?

    (A) 255.252.0.0   (B) 255.253.0.0

    (C) 255.254.0.0   (D) 255.255.0.0

77. Which of the following statements is/are TRUE about a computer network?

(i) The IP address 192.168.20.241 belongs to the network 192.168.20.0/26

(ii) The IP address 172.26.16.1 is the first host in the network 172.26.0.0/15

(iii) The destination address 255.255.255.255 is used for broadcasting in the local network.

(iv) The addresses in the network 169.255.0.0/16 are used as the link local addresses in IPv4.

(A) Only (i) and (iii) (B) Only (ii) and (iii)

(C) Only (ii), (iii) and (iv) (D) All the above (i), (ii), (iii) and (iv)

78. Which of the following statements is/are TRUE about an OSPF routing scenario?

(i) Intra domain routing is used in between Autonomous Systems.

(ii) OSPF works based on path vector routing.

(iii) OSPF supports point-to-point links only.

(iv) OSPF represents the actual network as a graph and every node in it computes the shortest path to all others.

(A) Only (i) and (iii)

(B) Only (ii)

(C) Only (iv)

(D) All the above (i), (ii), (iii) and (iv)

79. Which of the following statements is/are TRUE regarding an IDS?

(i) IDS monitors and identifies unauthorized system access attempts.

(ii) IDS can detect DoS attacks.

(iii) IDS needs the network card not to be in promiscuous mode.

(iv) Snort is an example for a network based IDS.

(A) Only (i) and (ii) (B) Only (i), (ii) and (iv)

(C) Only (ii) and (iii) (D) All the above (i), (ii), (iii) and (iv)

80. Which of the following is NOT a DHCP message type?
(A) DHCPOFFER (B) DHCPACK
(C) DHCPNACK (D) DHCPRESTORE

81. Which schema describes the part of database that a particular user group is interested and hides the rest of the database from that group, in three schema architecture of database systems?

  (A) Internal Schema

  (B) External Schema

  (C) Conceptual Schema

  (D) Conceptual and External Schema

82. In which of the following data model many to many relationship cannot be expressed?

  (A) Network Model

  (B) Relational Model

  (C) Hierarchical Model

  (D) Object Based Model

83. Which of the following type of DBMS language is used to define the internal schema if there is no strict separation between conceptual and internal levels?

  (A) Data Definition Language

  (B) Storage Definition Language

  (C) View Definition Language

  (D) Data Manipulation Language

84. Which of the following statement is/are true?

  (i) Database state and schema are same

  (ii) Meta data is the description of schema constructs and constraints

  (iii) Schema is the description of the database

  (A) (iii) Only

  (B) (i) and (iii) Only

  (C) (ii) Only

  (D) (ii) and (iii) Only

85. Which of the following is/are valid data types in SQL?

  (i) Timestamp

  (ii) Interval

  (iii) Char varying(n)

  (A) (i) Only

  (B) (i) and (ii) Only

  (C) (i) and (iii) Only

  (D) (i), (ii) and (iii)

86. Which of the following statement is/are NOT TRUE?

 (i) DROP TABLE command removes table definition from catalog.

 (ii) ALTER command can be used to change the data type of an attribute.

 (iii) Using RESTRICT option while using DROP TABLE command we can drop a table even if it is referenced in any constraints

 (A) (i) and (ii) Only   (B) (iii) Only

 (C) (i) and (iii) Only   (D) (ii) and (iii) Only

87. Match the following :
 (i) Assertion   (a) Improves Performance
 (ii) View   (b) Select tuple if condition matches
 (iii) Where clause   (c) CHECK
 (iv) Stored Procedure   (d) Combines selected column

 (A) (i)-(c), (ii)-(a), (iii)-(d), (iv)-(b)
 (B) (i)-(d), (ii)-(c), (iii)-(b), (iv)-(a)
 (C) (i)-(c), (ii)-(d), (iii)-(b), (iv)-(a)
 (D) (i)-(d), (ii)-(a), (iii)-(b), (iv)-(c)

88. A ——————— is a stored procedure which is executed automatically when some database related events occur.
 (A) Function   (B) Trigger
 (C) Transaction   (D) Cursor

89. The degree of a relationship type is :
 (A) The number of participating entity types
 (B) The number of participating entities
 (C) The total number of attributes of participating entity types
 (D) None of the above

90. A ——————— entity is created by defining set of subclasses of an entity type.
 (A) Higher Level   (B) Generalised
 (C) Specialised   (D) Lower Level

91. Which of the following is/are NOT a superkey in a relational schema with attributes P, Q, R, S where primary key is P R?
    (i)   PQS
    (ii) PSR
    (iii) PQRS
    (iv) QSR
        (A) (i) Only   (B) (i) and (ii) Only
        (C) (ii) and (iii) Only   (D) (i) and (iv) Only

92. Relation R connects entity type X to entity type Y and R does not have its own attribute. Under which one of the following conditions can the relational table R be merged with that of X?
        (A) Relationship R is many to one and participation of X in R is partial
        (B) Relationship R is many to one and participation of X in R is total
        (C) Relationship R is one to many and participation of X in R is partial
        (D) Relationship R is one to many and participation of X in R is total

93. Which variation of two phase locking protocol requires a transaction to lock all the items it access before the transaction begins?
        (A) Basic 2PL   (B) Strict 2PL
        (C) Conservative 2PL   (D) Rigorous 2PL

94. Once a transaction is completed successfully the changes made by the transaction persist in the database even if the system fails. Which desirable property of a transaction is related to the above statement?
        (A) Atomicity   (B) Consistency
        (C) Isolation   (D) Durability

95. Which of the following statement is TRUE?
        (A) Cascading Rollback occurs in Basic Timestamp ordering algorithm
        (B) Shadow paging is a NO UNDO/NO REDO technique
        (C) In force approach all updated pages are immediately written to disk when transaction commits
        (D) All the above

96. Which of the following statement is true in deferred update protocol?

(A) A transaction cannot change the database on disk until it reaches its commit point

(B) A transaction does not reach its commit point until all its update operations are recorded in the log and log is force written to disk

(C) REDO is needed in case system fails after transaction commits but before changes are recorded on disk

(D) All of the above

97. Which of the following technique is used to resolve collision in internal hashing?

(A) Multiple Hashing
(B) Static Hashing
(C) Linear Hashing
(D) Extendible Hashing

98. If the file records are ordered on a field which does not have a distinct value for each record, then the index is called :

(A) Dense Index
(B) Sparse Index
(C) Clustering Index
(D) Secondary Index

99. An organization has 4 departments. Which aggregate function and clause are used respectively if you want to get the average basic salary of employees in each of the department separately :

(A) Avg and Group by

(B) Average and Group by

(C) Average and Having

(D) Avg and Having

100. Rollback is normally used to :

(A) Recover from transaction failure
(B) Update the transaction
(C) Retrieve old records
(D) Repeat a transaction

_____

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK