

119780

**A4**

TIMINGS:	MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
2.00 pm to 5.00 pm	100	200 Minutes	180 Minutes

MENTION YOUR DIPLOMA CET NUMBER				QUESTION BOOKLET DETAILS	
				VERSION CODE	SERIAL NUMBER
23DCE					

**Dos:**

1. This question booklet is issued to you by the invigilator after the 2<sup>nd</sup> bell i.e., after 1.55 pm.
2. Check whether the DCET Number has been entered and shaded in the respective circles on the OMR answer sheet.
3. The version code and serial number of this question booklet should be entered on the OMR answer sheet and the respective circles should also be shaded completely.
4. The Version Code and Serial Number of this question booklet should be entered on the Nominal Roll without any mistakes.
5. Compulsorily sign at the bottom portion of the OMR answer sheet in the space provided.

**DONTs:**

1. **THE TIMING AND MARKS PRINTED ON THE OMR ANSWER SHEET SHOULD NOT BE DAMAGED / MUTILATED / SPOILED.**
2. The 3<sup>rd</sup> Bell rings at 2.00 p.m., till then;
  - Do not remove the seal present on the right hand side of this question booklet.
  - Do not; look inside this question booklet or start answering on the OMR answer sheet.

**IMPORTANT INSTRUCTIONS TO CANDIDATES**

1. In case of usage of signs and symbols in the questions, the regular textbook connotation should be considered unless stated otherwise.
2. This question booklet contains 100 (items) questions and each question will have one statement and four different options / responses & out of which you have to choose one correct answer.
3. After the 3<sup>rd</sup> Bell is rung at 2.00 pm remove the paper seal on the right hand side of this question booklet and check that this booklet does not have any unprinted or torn or missing pages or items etc., if so, get it replaced by a complete test booklet. Read each item and start answering on the OMR answer sheet.
4. Completely **darken / shade** the relevant circle with a **blue or black ink ballpoint pen against the question number on the OMR answer sheet.**

ಸರಿಯಾದ ಕ್ರಮ CORRECT METHOD	ತಪ್ಪು ಕ್ರಮಗಳು WRONG METHODS

5. Please note that even a minute unintended ink dot on the OMR answer sheet will also be recognized and recorded by the scanner. Therefore, avoid multiple markings of any kind on the OMR answer sheet.
6. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
7. After the last bell is issued at 5.00 pm, stop answering on the OMR answer sheet. Hand over the OMR answer sheet to the room invigilator as it is.
8. After separating the top sheet (Office copy), the invigilator will return the bottom sheet replica (candidate's copy) to you to carry home for self-evaluation.

1. Which of the following is **not** a cyber crime ?
- (A) Cryptography (B) Denial of Service  
(C) Man-in-the-middle attack (D) Phishing
2. DoS is abbreviated as \_\_\_\_\_.
- (A) Denial of Service (B) Distribution of Server  
(C) Distribution of Service (D) Denial of Server
3. \_\_\_\_\_ protects interconnected systems including hardware, software and programs and data from cyber attacks.
- (A) Cyber Security (B) Computer Security  
(C) Resource Security (D) Hardware Security
4. Basic functionality of the network device firewall is :
- (A) scans mobile applications  
(B) monitoring database  
(C) privatizes the computers  
(D) monitoring incoming and outgoing networks
5. An algorithm represented in the form of programming language is called :
- (A) Flowchart (B) Pseudocode  
(C) Program (D) Instruction
6. The \_\_\_\_\_ symbol is used when the flowchart is starting or ending.
- (A) Connector/Arrow (B) Terminal box/Rounded rectangle  
(C) Input/Output (D) Process
7. MIT App Inventor allows user to
- (A) Create web application (B) Build Android application  
(C) Create System Software (D) Develop Operating System

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Space for Rough Work

8. What is the function of the “when green flag clicked” command block ?
- (A) Points Sprite in the specified direction
  - (B) If condition is true, runs the blocks inside
  - (C) Runs the script
  - (D) Stops the execution of script
9. The correct sequence of HTML tags for starting a webpage is
- (A) Head, Title, Html, Body
  - (B) Html, Head, Title, Body
  - (C) Html, Body, Title, Head
  - (D) Html, Title, Head, Body
10. Web server :
- (A) is a computer system that delivers web pages
  - (B) is delivery news
  - (C) provides options for those seeking real-time discussions
  - (D) prints documents
11. Which of the following is used to style the appearance of web pages ?
- (A) Html
  - (B) JavaScript
  - (C) PHP
  - (D) CSS
12. Which of the following is an example of web browser ?
- (A) Google
  - (B) Firefox
  - (C) Apache
  - (D) MySQL
13. Which of the following is an open source and free workflow management software ?
- (A) Trello
  - (B) MS Excel
  - (C) Windows
  - (D) Linux
14. ERP package will handle \_\_\_\_\_ business functionality/functionalities.
- (A) One
  - (B) Two
  - (C) Three
  - (D) Multiple/all

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Space for Rough Work

15. \_\_\_\_\_ is a visual diagram of a company that describes what employees do, whom they report to and how decisions are made across the business.
- (A) Physical Structure (B) Organizational Structure  
(C) Logical Structure (D) Hybrid Structure
16. \_\_\_\_\_ is a methodology used in system analysis to identify, clarify, and organize system requirements.
- (A) Workflow (B) Use case  
(C) Algorithm (D) Software
17. Which of the following is *not* an application of IoT ?
- (A) Web browser (B) Smart home  
(C) Smart city (D) Self-driven cars
18. Which of the following is *not* a cloud service option ?
- (A) VaaS (B) IaaS  
(C) PaaS (D) SaaS
19. How many types of services are offered by cloud computing to the users ?
- (A) 2 (B) 4  
(C) 3 (D) 5
20. Combination of Public and Private deployment is called
- (A) Hybrid (B) Hyper  
(C) Public (D) Private

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Space for Rough Work

21. Unit of electrical power is
- (A) Volt (B) Watt  
(C) Watt-hour (D) Ampere-hour
22. In pipe earthing, the diameter of GI pipe embedded in the pit is
- (A) 32 mm (B) 38 mm  
(C) 48 mm (D) 56 mm
23. If a resistor of 100 ohms is connected in series with a parallel combination of two 200 ohms resistors, then the effective resistance is
- (A) 200 ohms (B) 250 ohms  
(C) 350 ohms (D) 150 ohms
24. If a resistor of  $20 \Omega$  is connected across a source of 5 volts DC supply, then the current in the circuit is
- (A) 1 Ampere (B) 4 Amperes  
(C) 0.5 Amperes (D) 0.25 Amperes
25. Power factor is
- (A) ratio of resistance to inductance  
(B) ratio of apparent power to true power  
(C) ratio of resistance to impedance  
(D) ratio of inductance to capacitance
26. The phase-to-neutral voltage in a 3-phase star connected system is 230 V. The phase-to-phase (line-to-line) voltage is
- (A) 230 V (B) 398.37 V  
(C) 400 V (D) 440 V

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Space for Rough Work

27. The time of period of an AC wave at frequency of 50 Hz is
- (A) 2 milliseconds (B) 10 milliseconds  
(C) 20 milliseconds (D) 50 milliseconds
28. The type of fuse used for domestic purpose is
- (A) HRC fuse (B) Kit kat or rewirable fuse  
(C) Ceramic cartridge fuse (D) Glass cartridge fuse
29. MCCB stands for
- (A) Moulded Case Circuit Breaker (B) Miniature Case Circuit Breaker  
(C) Maximum Current Circuit Breaker (D) Minimum Current Circuit Breaker
30. ELCB is used for detecting current leakage
- (A) above 8 kVA (B) below 5 kVA  
(C) above 5 kVA (D) below 8 kVA
31. A static machine which transfers electrical power from one circuit to another circuit without changing the frequency is called
- (A) DC machine (B) Alternator  
(C) Induction motor (D) Transformer
32. The initial type of connection of the motor windings when started with a star delta starter is
- (A) star connection (B) delta connection  
(C) series (D) parallel
33. The cause for a 3-phase motor producing inadvertent mechanical noise is :
- (A) Interchanged supply terminals (B) High load on motor  
(C) High voltage on motor winding (D) Incorrect coupling

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Space for Rough Work

34. Cell is an \_\_\_\_\_ device.
- (A) electro-mechanical (B) electro-chemical  
(C) electro-magnetic (D) electro-dynamic
35. The most commonly used battery in electric vehicles is
- (A) Lithium-ion battery (B) Lead-acid battery  
(C) Nickel-Cadmium battery (D) Alkaline rechargeable battery
36. Digital signals are characterized by
- (A) Continuous voltage levels (B) Infinite resolution  
(C) Discrete voltage levels (D) Variable voltage levels
37. According to rules and laws of Boolean Algebra,  $A + A =$  \_\_\_\_\_.
- (A)  $2A$  (B)  $A$   
(C)  $1$  (D)  $A^2$
38. Photo diode is used in which of the following applications ?
- (A) Voltage regulation (B) Temperature measurement  
(C) Light detection (D) Radio Frequency (RF) Amplification
39. If a resistor is having a colour band as first band = Brown, second band = Black and third band = Red, then the resistance value is
- (A)  $1\text{ k}\Omega$  (B)  $10\text{ k}\Omega$   
(C)  $100\ \Omega$  (D)  $100\text{ k}\Omega$
40. The binary equivalent of the decimal number 9 is
- (A) 1001 (B) 1000  
(C) 1100 (D) 1010

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Space for Rough Work

41. Project Management is a combination of
- (A) human and non-human resources
  - (B) only human resources
  - (C) only non-human resources
  - (D) no resources at all
42. The consultant who is appointed to carry out the project work is
- (A) Compound house consultant
  - (B) In-house consultant
  - (C) Out-house consultant
  - (D) Bridge consultant
43. The type of project which requires minimum amount of capital is
- (A) Crash project
  - (B) Normal project
  - (C) Disaster project
  - (D) Consultant project
44. Projects like building a hospital, a park, a playground and government projects like highway construction are examples of
- (A) Social needs
  - (B) Customer needs
  - (C) Market needs
  - (D) Ecological needs

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Space for Rough Work

45. In Project Management, WBS stands for

- (A) Work Breakdown Structure
- (B) Waste Breakdown Structure
- (C) Window Breakdown Structure
- (D) Wireless Breakdown Structure

46. The first step in Project Execution Plan is

- (A) Work packaging plan
- (B) Contracting plan
- (C) Organization plan
- (D) Procedure plan

47. The team which gives the idea to start a project is

- (A) Core project team
- (B) Full project team
- (C) Advising project team
- (D) Initial project team

48. In PEP, the letter 'E' stands for

- |                |                |
|----------------|----------------|
| (A) Execution  | (B) Estimation |
| (C) Evaluation | (D) Enthusiasm |

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Space for Rough Work

49. In Project Life Cycle, more time is required for
- (A) Project closure (B) Project initiation  
(C) Project execution (D) Project planning
50. Innovation is the hallmark of every project. Here innovation means
- (A) New ideas (B) Project success  
(C) Professional approach (D) Project Management
51. The Project Life Cycle Curve indicates
- (A) Work packaging  
(B) Number of workers in the project  
(C) Growth, maturity and decline  
(D) Project manual
52. In Project Management, taking actions to measure the quality accurately is the function of
- (A) Quality management  
(B) Cost management  
(C) Review management  
(D) Risk management

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Space for Rough Work

53. Project planning methodologies involve
- (A) Planning by non-incentive and direction
  - (B) Planning by incentive and direction
  - (C) Unplanned initiation
  - (D) Changing the project policies
54. Identify the *incorrect* statement below :
- (A) Project objective should be specific.
  - (B) Project objective should be realistic.
  - (C) Project objective should not be framed timely.
  - (D) Project objective should be measurable.
55. WBS, PEP and PPM are the tools used to design
- (A) Project plan
  - (B) Project work system
  - (C) Project diary
  - (D) Project direction
56. The earliest method used for planning of project was
- (A) CPM
  - (B) PERT
  - (C) Bar Chart
  - (D) Milestone Chart

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Space for Rough Work

57. The expansion of PERT is
- (A) Programme Evaluation and Review Technique
  - (B) Project Estimation and Recording Tool
  - (C) Project Estimation and Resource Technology
  - (D) Performance Estimation and Resource Tool
58. For non-repetitive projects \_\_\_\_\_ tool is used in production planning and scheduling.
- (A) CPM
  - (B) PERT
  - (C) Both CPM and PERT
  - (D) Bar Chart
59. The purpose of conducting a project review is
- (A) To close the project
  - (B) To initiate the project
  - (C) To develop the project scope
  - (D) To assess project performance
60. A project review does *not* contain
- (A) Performance evaluation
  - (B) Evaluating the capital budget
  - (C) Data collection
  - (D) Initial review

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Space for Rough Work

61. In a square matrix, if the elements above the principal diagonal are zero, then it is called

- (A) Identity matrix
- (B) Lower triangular matrix
- (C) Upper triangular matrix
- (D) Diagonal matrix

62. The value of  $x$  if  $\begin{bmatrix} x-1 & 2 \\ 2 & 4 \end{bmatrix}$  is singular, is

- (A) 3
- (B) 8
- (C) -2
- (D) 2

63. The inverse of the matrix

$$A = \begin{bmatrix} -1 & 0 \\ 5 & 7 \end{bmatrix} \text{ is}$$

- (A)  $-\frac{1}{7} \begin{bmatrix} 7 & 0 \\ -5 & -1 \end{bmatrix}$
- (B)  $\frac{1}{7} \begin{bmatrix} 7 & 0 \\ -5 & -1 \end{bmatrix}$
- (C)  $-\frac{1}{7} \begin{bmatrix} -7 & 0 \\ -5 & -1 \end{bmatrix}$
- (D)  $\frac{1}{7} \begin{bmatrix} 7 & 0 \\ 5 & 1 \end{bmatrix}$

64. The eigenvalue of the matrix

$$A = \begin{bmatrix} 3 & 0 \\ 1 & 3 \end{bmatrix} \text{ is}$$

- (A) 2, 2
- (B) -3, -3
- (C) 3, 3
- (D) -3, 3

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Space for Rough Work

65. The two lines  $ax + by = c$  and  $a'x + b'y = c'$  are perpendicular if
- (A)  $ab' = ba'$  (B)  $aa' + bb' = 0$   
 (C)  $a'b + a'b' = 0$  (D)  $ab' + ba' = 0$
66. The y-intercept of any line passing through the origin is
- (A) 0 (B) 1  
 (C) -1 (D) 2
67. Slope intercept form of straight line is
- (A)  $y + mx - c = 0$  (B)  $x = my + c$   
 (C)  $y = x + m$  (D)  $y = mx + c$
68. The tangent of the angle of intersection between two lines with slopes  $m_1$  and  $m_2$  is
- (A)  $\left| \frac{m_1 + m_2}{1 - m_1 m_2} \right|$  (B)  $\left| \frac{m_1 + m_2}{m_1 - m_2} \right|$   
 (C)  $\left| \frac{m_1 - m_2}{1 - m_1 m_2} \right|$  (D)  $\left| \frac{m_1 - m_2}{1 + m_1 m_2} \right|$
69. If the ladder is inclined to the wall at an angle of  $135^\circ$ , then the inclination in radians is
- (A)  $\frac{4\pi}{3}$  (B)  $\frac{3\pi}{4}$   
 (C)  $\frac{2\pi}{4}$  (D)  $\frac{4\pi}{5}$
70. The value of  $\sin 60^\circ \cos 30^\circ - \cos 60^\circ \sin 30^\circ$  is
- (A)  $\frac{1}{2}$  (B)  $-\frac{1}{2}$   
 (C)  $\frac{\sqrt{3}}{2}$  (D) 0

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Space for Rough Work

71. The simplified value of  $\frac{\sin 3A + \sin A}{\sin 3A - \sin A}$  is

(A)  $\cot A \tan 5A$

(B)  $\tan A \cot 2A$

(C)  $\tan 2A \cot A$

(D)  $\tan 3A \cot 2A$

72. If  $y = \log x + \sec 2x$ , then  $\frac{dy}{dx}$  is

(A)  $-\frac{1}{x} + \sec 2x \tan x$

(B)  $\frac{1}{x} + 2 \sec 2x \tan 2x$

(C)  $\frac{1}{\sqrt{x}} + \sec x \tan x$

(D)  $-\frac{1}{\sqrt{x}} + \sec 3x \tan 2x$

73. The derivative of the function  $\frac{1+x}{1-x}$  is

(A)  $\frac{-2}{(1-x)^2}$

(B)  $\frac{2x}{(1-x)^2}$

(C)  $\frac{-2x}{(1-x)^2}$

(D)  $\frac{2}{(1-x)^2}$

74. Find the second order derivative of  $y = e^{2x} - e^{-x}$ .

(A)  $4e^{2x} - e^{-x}$

(B)  $4e^{2x} + e^{-x}$

(C)  $-4e^{2x} - e^{-x}$

(D)  $4e^{2x} + e^x$

75. The equation of the tangent to the curve  $y = 2x^2 + x$  at  $(1, 2)$  is

(A)  $5x - y - 3 = 0$

(B)  $5x + y + 3 = 0$

(C)  $5x + y - 6 = 0$

(D)  $5x + y + 6 = 0$

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Space for Rough Work

76. The value of  $\int (\sec x \tan x + \sec^2 x) dx$  is

(A)  $\sec 2x + \tan x + c$

(B)  $\sec x + \operatorname{cosec} x + c$

(C)  $\sec x + \tan x + c$

(D)  $\sec x - \operatorname{cosec}^2 x + c$

77. The value of  $\int (2x^3 + 3x^2 + 2x)^{10} (3x^2 + 3x + 1) dx$  is

(A)  $\frac{1}{22} (6x + 3x^2 + 2x)^{11} + c$

(B)  $\frac{1}{22} (2x^3 + 3x^2 + 2x)^{11} + c$

(C)  $\frac{1}{22} (2x^3 + 3x^2 - 2x)^{12} + c$

(D)  $\frac{1}{12} (2x^3 + 3x^2 - 2x)^{12} + c$

78. The value of  $\int_0^{\pi/4} \tan^2 x dx$  is

(A)  $1 + \frac{\pi}{4}$

(B)  $1 + \frac{4\pi}{2}$

(C)  $1 - \frac{\pi}{4}$

(D)  $1 - \frac{4\pi}{2}$

79. The area bounded by  $y = \sin x$  and x-axis from  $x = 0$  to  $x = \pi$  is

(A) 2

(B) -2

(C) 3

(D) 1

80. The value of  $\tan 45^\circ \cot 225^\circ + \tan^2 60^\circ$  is

(A) -4

(B) 4

(C) 2

(D) 3

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Space for Rough Work

81. \_\_\_\_\_ is an example of quantitative data.
- (A) Volume (B) Words  
(C) Symbols (D) Colour
82. Data cleaning is the process of
- (A) removing viruses (B) correctly formatting data  
(C) removing duplicate data (D) properly formatting data
83. \_\_\_\_\_ is *not* a data collection tool.
- (A) Word (B) Focus Group Discussion  
(C) Survey (D) Questionnaire
84. The graph of cumulative frequency is called
- (A) Frequency polygon (B) Histogram  
(C) Cumulative frequency polygon (D) Frequency histogram
85. To calculate percentage frequency, we use \_\_\_\_\_ formula.
- (A)  $P.f. = (f \times n) \div 100$  (B)  $P.f. = (f \div n) \times 100$   
(C)  $P.f. = (100) \div (f \times n)$  (D)  $P.f. = (100) \times (f \div n)$
86. If  $X_1, X_2, X_3, \dots, X_n$  are the observations of a given data, then the mean of the observations will be :
- (A)  $\frac{\text{Total number of observations}}{\text{Sum of observations}}$   
(B) Sum of observations + Total number of observations  
(C)  $\frac{\text{Sum of observations}}{\text{Total number of observations}}$   
(D) Total number of observations – Sum of observations

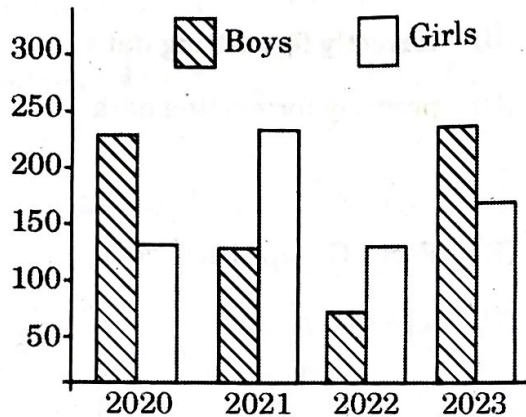
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Space for Rough Work

87. The end points of a class interval are the \_\_\_\_\_ and \_\_\_\_\_ values that a variable can take.

- (A) Lowest and Highest (B) Minimum and Maximum  
(C) Numeral and Average (D) Mean and Mode

The graph given below, shows the participation of students of a school in outdoor games in different years. By using the data given below, answer the following questions (88 – 89) :



88. In which years did the girls participate more than the boys ?

- (A) 2020, 2023 (B) 2021, 2022  
(C) 2022, 2023 (D) 2020, 2021

89. In which two years did an equal number of boys participate ?

- (A) 2020, 2021 (B) 2020, 2022  
(C) 2020, 2023 (D) 2021, 2022

90. To find third quartile in Excel, we use \_\_\_\_\_ formula.

- (A) = QUARTER (3, Range) (B) = QUARTILE (3, Range)  
(C) = QUARTER (Range, 3) (D) = QUARTILE (Range, 3)

91. The percentile divides a series into \_\_\_\_\_ equal parts.

- (A) fifty (B) twenty  
(C) ten (D) hundred

92. The value of first quartile is 23 and interquartile of set of data range is 20. The value of third quartile is

- (A) 23 (B) 33  
(C) 43 (D) 53

Space for Rough Work

93. The algebraic sum of the deviations of a frequency distribution from its mean is always
- (A) a non-zero number (B) zero  
(C) less than zero (D) greater than zero
94. The Excel formula for 'Mean' is
- (A) = MEDIAN (array of numbers) (B) = AVERAGE (array of numbers)  
(C) = MEAN (array of numbers) (D) = MODE (array of numbers)
95. What is output syntax in Python ?
- (A) Print (" ") (B) PRINT (" ")  
(C) print (" ") (D) Printf (" ")
96. "str" is a
- (A) Text Type (B) Numeric Type  
(C) Binary Type (D) Sequence Type
97. In Python, \_\_\_\_\_ standard data types are commonly used.
- (A) three (B) five  
(C) ten (D) four
98. The result of Python program gets displayed in \_\_\_\_\_.
- (A) IDLE Shell 3.9.1 window (B) IDLE Shell 3.1.9 window  
(C) ILDE Shell 3.9.1 window (D) IELD Shell 3.9.1 window
99. Which one of the following quotations in Python does not accept the quotes to denote strings ?
- (A) ( ' ' ) (B) ( " " )  
(C) ( ( ) ) (D) ( " " " " )
100. In Python, \_\_\_\_\_ is used to end the physical line or ignore the comment.
- (A) \*\* (B) #  
(C) & (D) \\\

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Space for Rough Work

**DIPLOMA - COMMON ENTRANCE TEST-2023 (202308DE)**

**PROVISIONAL KEY ANSWERS**

Set A4	KEA KEY
1	A
2	A
3	A
4	D
5	C
6	B
7	B
8	C
9	B
10	A
11	D
12	B
13	A
14	D
15	B
16	B
17	A
18	A
19	C
20	A
21	B
22	B
23	A
24	D
25	C
26	B
27	C
28	B
29	A
30	C
31	D
32	A
33	D
34	B
35	A
36	C
37	B
38	C
39	A
40	A
41	A
42	C
43	B
44	A
45	A
46	B
47	D
48	A
49	C
50	A

Downloaded from - DEEMECH

Downloaded from - DEEMECH

Set A4	KEA KEY
51	C
52	A
53	B
54	C
55	B
56	C
57	A
58	B
59	D
60	C
61	B
62	D
63	A
64	C
65	B
66	A
67	D
68	D
69	B
70	A
71	C
72	B
73	D
74	A
75	A
76	C
77	B
78	C
79	A
80	B
81	A
82	B
83	A
84	B
85	B
86	C
87	A
88	B
89	C
90	D
91	D
92	C
93	B
94	B
95	C
96	A
97	B
98	A
99	C
100	B