Karnataka PGCET 2026 MCA

Question Paper

Conducted by Karnataka Examinations Authority (KEA)

General Instructions

(i) The examination will be conducted in Computer-Based Test (CBT) mode.

(ii) Each question carries +1 mark for a correct answer. There is no negative marking for incorrect answers.

(iii) The total number of questions is 120.

(iv) The duration of the exam is 1 hour and 30 minutes (90 minutes).

1. Match the following List-I (verb forms) with List-II (non-finites):

List - I (Verb form)	List - II (Non-finites)
(a) Present participle	(i) Verb form used as a noun without "to"
(b) Infinitive	(ii) Verb form ending in -ing used as an adjecti or for continuous tense
(c) Gerund	(iii) Base form of a verb often preceded by "to"
(d) Perfect participle	(iv) Having + past participle showing complete action before another action

Codes:

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

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

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

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

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2. Match the following clauses with their functions:

List - I (Clauses)	List - II (Functions)
(a) Noun clause	(i) Modifies a noun and usually begins with *who, which, that*
(b) Adverbial clause	(ii) Functions as a noun within a sentence
(c) Relative clause	(iii) Modifies a verb, adjective or adverb (time, reason, condition, etc)
(d) Conditional clause	(iv) Expresses a condition often introduced by '*if*' or '*unless*'

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

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

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

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

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3. Choose the correct word to complete the sentence:

His speech was so _____ that everyone lost interest halfway through.

(A) Engaging

(B) Monotonous

(C) Lively

(D) Exciting

Read the following passage and answer the questions (4-6):

Technology has transformed the way people communicate. In the past, letters took days or even weeks to reach their destination. Today, messages can be sent instantly through e-mails and mobile applications. While this has made communication faster and more convenient, it has also reduced face-to-face interactions. Many people now prefer texting over meeting in person, which may affect social relationships in the long run.

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4. How were messages sent in the past?

(A) Through mobile apps

(B) Through emails

(C) Through letters

(D) Through video calls

---

5. What is one advantage of modern communication?

(A) It is slower

(B) It is more expensive

(C) It is instant

(D) It requires travel

6.

What is one disadvantage of modern communication mentioned in the passage?

(A) Increased travel

(B) Reduced face-to-face interaction

(C) Higher costs

(D) Lack of technology

7.

OBFUSCATE nearly means:

(a) Illuminate

(b) Confound

(c) Explicate

(d) Muddle

(A) (a) and (b) are correct

(B) (b) and (c) are correct

(C) (b) and (d) are correct

(D) (a) and (c) are correct

8.

Choose the antonyms of LOQUACIOUS.

(a) Garrulous

(b) Voluble

(c) Reticent

(d) Taciturn

(A) (a) and (b) are correct

(B) (b) and (c) are correct

(C) (c) and (d) are correct

(D) (d) and (a) are correct

9.

Choose the correct meaning of the phrase “a blessing in disguise”.

(A) Hidden danger

(B) A very obvious problem

(C) A happy occasion

(D) Something that seems bad but turns out to be good

10.

Arrange the sentences in the correct order.

(A) The teacher appreciated her efforts.

(B) She worked hard to complete the project on time.

(C) Meena was assigned a project in the class.

(D) She presented it confidently before everyone.

(A) C B D A

(B) B C D A

(C) C D B A

(D) B D C A

11.

Primary classification of programming languages are

(a) Machine language

(b) Assembly language

(c) High level language

(d) Pseudocode and Algorithms

(A) Only (c) and (d) are correct

(B) Only (a) and (b) are correct

(C) Only (a), (b) and (c) are correct

(D) Only (a) and (d) are correct

12.

Match the following with respect to connections between processor and memory.

	List - I (Registers)		List - II (Usage)
(a)	IR	(i)	Keeps track of execution of a program
(b)	MAR	(ii)	Holds the instruction that is currently being executed
(c)	MDR	(iii)	Data to be written into or read out of the addressed location
(d)	PC	(iv)	Holds the address of the location to be accessed

Codes:

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

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

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

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

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13. In `b = 66.6 / a + 12 * n;`**, which operation will be performed first?**

(A) `66.6 / a` (B) `12 * n` (C) `a + 12` (D) Depends upon the compiler

---

14. Consider the following instruction.

```
ADD R1, R2, R3
```

What is the meaning of the above instruction?

(A) Add the contents of registers R1 and R2 and place the sum in R3 (B) Add the contents of registers R1, R2 and R3 and place the sum in another register (C) Add the contents of registers R2 and R3 and place the sum in R1 (D) Instruction is invalid

15. What is the meaning of 16×8 organization with respect to memory chip?

(A) 8 words of 16 bits each (B) 16 bits × 8 bits (C) 16 words of 8 bits each (D) 16 words of 8 bytes each

---

16. Reservation clerks for Airlines and Hotels check availability for given request and make reservation. These type of users are categorised into _____ with respect to database applications.

(A) Casual end users (B) Parametric end users (C) Sophisticated end users (D) Standalone users

---

17.

The _____ data model which makes it possible to organize data in a collection of records with fixed structure.

(1) Relational Data Model

(2) Network Data Model

(3) Hierarchical Data Model

(4) Object Data Model

18.

_____ language is used to define the logical, external and physical schemas and access authorizations.

(1) Data Manipulation Language (DML)

(2) Data Definition Language (DDL)

(3) Logical Definition Language (LDL)

(4) Data-Driven Language (DDL)

19.

Arrange the given list of memories as per the size.

(a) Cache memory

(b) Registers

(c) Secondary memory

(d) Primary memory

(1) (b), (a), (d), (c)

(2) (b), (a), (c), (d)

(3) (a), (b), (c), (d)

(4) (d), (b), (a), (c)

20.

The control unit of a computer is designed to go through an instruction cycle that is divided into following phases.

(a) Fetch the instruction from memory

(b) Decode the instruction

(c) Execute the instruction

(1) Only (b) and (c) are correct

(2) Only (c) is correct

(3) Only (a) is correct

(4) (a), (b) and (c) are correct

21.

Full form of WAMP is _____ with respect to web applications.

(1) Windows, Apache, MySQL and PHP

(2) Word, Adobe, MySQL and PHP

(3) Windows, Apache, Mainstream and Program

(4) Windows, Adobe, MySQL and PHP

22.

Which of the following are valid hexadecimal numbers?

(i) 1A3F

(ii) 29GF

(iii) FF12

(iv) 7BHE

(1) (i), (ii) and (iv)

(2) (i), (ii) and (iii)

(3) (i) and (iii)

(4) (i), (iii) and (iv)

23.

The decimal number 25_{10} is represented in binary as _____.

(1) 1 1 0 0 1

(2) 1 0 1 0 1

(3) 1 1 1 0 0

(4) 1 0 0 1 1

24.

Arrange the following steps in correct order to binary:

(i) Repeat division until becomes 0

(ii) Divide the number by 2

(iii) Write the remainder

(iv) Write the remainder in reverse order

(1) (i) → (ii) → (iii) → (iv)

(2) (ii) → (iii) → (i) → (iv)

(3) (iii) → (i) → (iv) → (ii)

(4) (iv) → (ii) → (iii) → (i)

25.

Match the Characters in List-I with their correct ASCII Property in List-II.

List - I	List - II
(a) 'A'	(i) ASCII 32 (Decimal)
(b) 'a'	(ii) ASCII 48 (Decimal)
(c) '0' (Zero)	(iii) ASCII 65 (Decimal)
(d) ' ' (Space)	(iv) ASCII differ from (i) by 32

(1) a - i, b - iii, c - iv, d - ii

(2) a - i, b - iv, c - iii, d - ii

(3) a - iii, b - iv, c - i, d - ii

(4) a - iii, b - iv, c - ii, d - i

26.

A floating point number typically consists of

(i) Sign bit

(ii) Parity bit

(iii) Mantissa (Significand)

(iv) Exponent

(1) (i), (ii) and (iv)

(2) (i), (iii) and (iv)

(3) (ii), (iii) and (iv)

(4) (i), (ii) and (iii)

27.

Arrange the steps to find two's complement of a binary number:

(i) Take 1's complement

(ii) Write the binary number

(iii) Add 1

(iv) Obtain final result

(1) (iv) → (i) → (iii) → (ii)

(2) (ii) → (iii) → (i) → (iv)

(3) (ii) → (i) → (iii) → (iv)

(4) (i) → (ii) → (iii) → (iv)

28.

The result of $101_2 \times 10_2$ is _____.

(1) 1010_2

(2) 1000_2

(3) 1110_2

(4) 1100_2

29.

Match the binary operations in List-I with correct results in List-II.

List – I	List – II
(a) 1 + 1	(i) 1
(b) 10 – 1	(ii) 10
(c) 1 × 0	(iii) 11
(d) 11 ÷ 1	(iv) 0

(1) a - ii, b - i, c - iv, d - iii

(2) a - iii, b - ii, c - iv, d - i

(3) a - ii, b - iii, c - i, d - iv

(4) a - i, b - v, c - ii, d - iii

30.

Which scheduling algorithm works on the principles of time slices?

(1) FCFS

(2) Round Robin

(3) SJF

(4) Priority Scheduling

31.

Which of the following are the characteristics of Real Time Operating Systems (RTOS)?

(i) Deterministic response

(ii) High latency allowed

(iii) Strict timing constraints

(iv) Used in embedded systems

(1) (i) and (iii) only

(2) (i), (iii) and (iv) only

(3) (ii) and (iv) only

(4) (i), (ii) and (iii) only

32.

Arrange the steps in process state transition.

(i) Running

(ii) Ready

(iii) New

(iv) Waiting

(1) (i) → (ii) → (iii) → (iv)

(2) (iii) → (ii) → (i) → (iv)

(3) (iv) → (i) → (ii) → (iii)

(4) (ii) → (i) → (iii) → (iv)

33.

Match the operating systems in List-I with their correct characteristics in List-II.

List – I		List – II	
(a)	Batch OS	(i)	Immediate response required
(b)	Real Time OS	(ii)	No user interaction
(c)	Time Sharing OS	(iii)	Multiuser share CPU
(d)	Distributed OS	(iv)	Multiple systems connected

Codes:

(1) a - ii, b - i, c - iii, d - iv

(2) a - ii, b - i, c - iv, d - iii

(3) a - iii, b - iv, c - i, d - ii

(4) a - iii, b - i, c - iv, d - ii

34.

In a class exam, Ramya's average mark was 90 per paper. If she had obtained 4 more marks in Maths paper and 20 more marks in Physics paper, then her average per paper would have been 94. How many papers were there in the exam?

(1) 6

(2) 8

(3) 9

(4) 7

---

35. In a two digit number, the digit in the unit's place is equal to the square of the digit in ten's place and the difference between the numbers obtained by interchanging the digits is 54. What is 40% of the original number?

(1) 23.4

(2) 15.6

(3) 37.2

(4) 39

36.

A set of letters and numbers are arranged in certain order where some of them are missing.

$$1 \quad \_ \quad 7g \quad \_ \quad c8 \quad \_ \quad \_ \quad b$$

Choose the correct order of appearing in the missing places.

(1) 3 h a 2

(2) a h 2 3

(3) a 3 h 2

(4) 2 3 h a

---

37. In a certain code language, SHORE is written as PELOB, then match the following original letters in List-I that are coded in List-II.

List-I		List-II	
(a)	B	(i)	W
(b)	Z	(ii)	G
(c)	Q	(iii)	N
(d)	J	(iv)	Y

Codes: (1) a - iv, b - i, c - ii, d - iii

(2) a - iv, b - i, c - iii, d - ii

(3) a - iii, b - i, c - ii, d - iv

(4) a - ii, b - iii, c - i, d - iv

38.

No reptiles can fly. All birds can fly.

Which of the following must be true?

(1) No birds are reptiles

(2) All reptiles can fly

(3) All flying creatures are birds

(4) Some birds are reptiles

39.

Which one of the following number is completely divisible by 45?

(1) 181566

(2) 331145

(3) 242865

(4) 2023550

40.

A class of 30 students comprises of boys who can play cricket, hockey and/or football. 3 boys play only cricket, 3 boys play only hockey and 2 play only football. 4 boys could play all 3 games, while 11 could play football and cricket and 10 boys could play football and hockey. How many boys played cricket and hockey but not football?

(1) 1

(2) 3

(3) 4

(4) 5

---

41. Five groups of letters are given. One of these groups is different from the other four. Find the odd one.

YDEUZ, ASHBR, OZPEQ, AXCMF, HLXEF

(1) YDEUZ

(2) ASHBR

(3) OZPEQ

(4) AXCMF

---

42. If 15^{th} August, 2023 was on Tuesday, then on which day of the week would the Independence Day be celebrated in the year 2040?

(1) Tuesday

(2) Wednesday

(3) Thursday

(4) Friday

---

43. Consider the following equations I and II.

$$\text{I}: \sqrt{1\frac{9}{16}} = 1\frac{1}{4}$$

$$\text{II}: \sqrt[3]{2744} = 2 \times 7\sqrt{7}$$

(1) I and II are correct

(2) I is incorrect, II is correct

(3) I is correct, II is incorrect

(4) I and II are incorrect

---

44. If $A \star B$ means A and B are of the same age, and $A - B$ means B is younger than A, then Himani $\star$ Mahesh $-$ Jay means:

(1) Himani is younger than Jay

(2) Mahesh is younger than Jay

(3) Jay is the youngest

(4) Jay is the oldest

---

45. If the sum of two numbers is 10 and the difference of their squares is 20, then these numbers are:

(1) 8 and 2

(2) 6 and 4

(3) 7 and 3

(4) 5 and 5

---

46. A figure consists of a triangle attached to a square such that the triangle points up. If the figure is rotated 90° clockwise, then where will the triangle point?

(1) Left

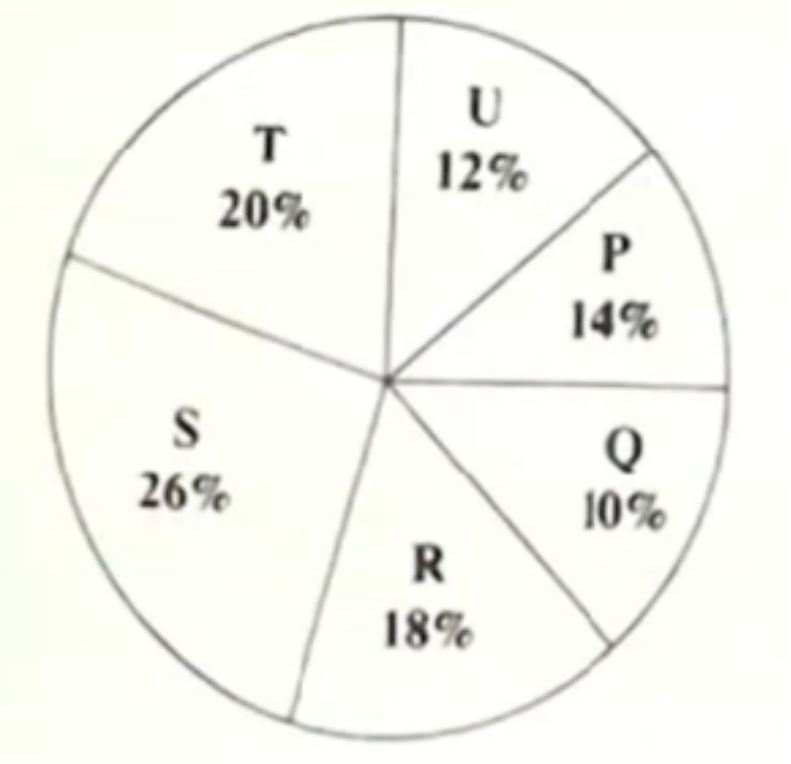
(2) Right

(3) Downward

(4) Upward

---

47. Distribution of total number of cellular phones sold by six stores in December, 2025 is given in the following pie chart.



What is the central angle corresponding to the total number of cellular phones sold by S?

(1) 99.2°

(2) 93.6°

(3) 105.6°

(4) 97.4°

---

48. A researcher is conducting a statistical study on the students academic performance and

life style habits. To ensure the study is scientifically valid, the most appropriate sequence for carrying out data collection, analysis and the following tasks is:

(P) Apply statistical methods to summarise and test relationships in the data

(Q) Design research objects variable sampling plan and data collection instrument

(R) Interpret findings and draw conclusions

(S) Collect responses from selected participants

(T) Class, code and organise the collected raw data

(1) S → T → Q → P → R
(2) S → T → Q → R → P
(3) Q → S → T → P → R
(4) T → Q → S → P → R

---

49. Which of the following statements are correct?

(a) Startups are innovation-driven businesses and aim at scalability

(b) Securities and Exchange Board of India regulates stock markets and protects investors

(c) GST is an indirect tax applicable across India and is collected only once at the final stage of the transaction

(d) Blinkit operates in quick commerce, which focuses on fast delivery using dark stores

(1) (a), (b) and (c)
(2) (a), (b) and (d)
(3) (b), (c) and (d)
(4) (c) and (d) only

---

50. Which of the following statements about consumer-to-consumer (C2C) e-business model are correct?

(a) It involves transactions between two consumers

(b) Online platforms like OLX facilitate C2C trade

(c) It reduces dependency on traditional retailers

(d) Businesses directly supply goods and services to customers in this model

(1) (a), (b) and (c)
(2) (a) and (b) only
(3) (b), (c) and (d)
(4) (c) and (d) only

---

51. Which is NOT an advantage of writing Business letter?

(1) It has wide reach
(2) It can be standalone medium
(3) It is not cost effective
(4) It can be reproduced and repeated

---

52. Arrange the sentences in the correct order.

(A) The teacher appreciated her efforts

(B) She worked hard to complete the project on time

(C) Meena was assigned a project in the class

(D) She presented it confidently before everyone

(1) C B D A
(2) B C D A
(3) C D B A
(4) B D C A

53.

Which of the following is/are true?

(i) $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$

(ii) $(a+b+c)^2 = a^2+b^2+c^2+2ab+2bc+2ca$

(iii) $(x+a)(x+b) = x^2+(a+b)x+ab$

(1) Both (i) and (ii)

(2) (iii) only

(3) Both (i) and (iii)

(4) (i), (ii) and (iii)

54.

A person has 2 parents, 4 grandparents, 8 great grandparents and so on. What is the number of his ancestors during the 5^{th} generation preceding his own?

(1) 40

(2) 124

(3) 32

(4) 62

55.

If $A = \begin{bmatrix} 1 & 2 & 4 \\ -1 & 3 & 0 \\ 1 & 2 & 0 \end{bmatrix}$**, then the value of determinant of A is:**

(1) -10

(2) 10

(3) 20

(4) -20

56.

If $A=\begin{bmatrix}1 & 2\\ -1 & 3\end{bmatrix}$, $B=\begin{bmatrix}-1 & 2\\ 0 & 4\end{bmatrix}$**, then match the following and choose the correct answer.**

List - I	**List - II**
(a) $A+B$	(i) $\begin{bmatrix}-1 & 10\\ 1 & 10\end{bmatrix}$
(b) $A-B$	(ii) $\begin{bmatrix}0 & 4\\ -1 & 7\end{bmatrix}$
(c) AB	(iii) $\begin{bmatrix}1 & 4\\ 0 & 10\end{bmatrix}$
(d) $2A+B'$	(iv) $\begin{bmatrix}2 & 0\\ -1 & -1\end{bmatrix}$

Codes:

(1) a - ii, b - iv, c - i, d - iii

(2) a - iii, b - iv, c - i, d - ii

(3) a - iii, b - i, c - v, d - ii

(4) a - ii, b - i, c - iv, d - iii

57.

Let U **be universal set. If** A **and** B **are subsets of** U**, then match the following and choose the correct answer.**

List - I	**List - II**
(a) $A\cup A'$	(i) A
(b) $(A\cup B)'$	(ii) $A'\cup B'$
(c) $(A\cap B)'$	(iii) $A'\cap B'$
(d) $(A')'$	(iv) U

Codes:

(1) a - ii, b - i, c - iv, d - iii

(2) a - ii, b - iii, c - iv, d - i

(3) a - iii, b - iv, c - ii, d - i

(4) a - iv, b - iii, c - ii, d - i

---

58. Let 'U' be universal set. If A and B are subsets of U, then match the following and choose the correct answer.

List - I	List - II
(a) $A \cup A'$	(i) A
(b) $(A \cup B)'$	(ii) $A' \cup B'$
(c) $(A \cap B)'$	(iii) $A' \cap B'$
(d) $(A')'$	(iv) $\cup$

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

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

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

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

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59. In a shop, the cost of 3 pens and 3 pencils is Rs. 9 and the cost of 4 pens and 6 pencils is Rs. 14. The cost of each pencil in Rs. is:

(A) 1

(B) 2

(C) 3

(D) 4

---

60. The equation of the line passing through the points $(1, 2)$ and $(-1, 4)$ is:

(A) $x + y = 3$

(B) $x + y = 4$

(C) $2x + y = 4$

(D) $x + 2y = 3$

---

61. The midpoint of the line joining the points $(2, 4)$ and $(6, -2)$ is:

(A) $(4, -1)$

(B) $(4, 1)$

(C) $(2, 4)$

(D) $(3, -1)$

---

62. The point of intersection of the lines $3x + 2y = 6$ and $3x - 2y = -2$ is:

(A) $(2/3, 2)$

(B) $(2/3, -2)$

(C) $(-2/3, 2)$

(D) $(-2/3, -2)$

---

63. The centre of the circle $(x + 5)^2 + (y - 3)^2 = 36$ is:

(A) $(5, 3)$

(B) $(-5, -3)$

(C) $(-5, 3)$

(D) $(5, -3)$

---

64. The reflection of the point $(4, -13)$ about the line $5x + y + 6 = 0$ is:

(A) $(-1, -14)$

(B) $(-5, -14)$

(C) $(-1, -5)$

(D) $(-2, -7)$

---

65. The equation of the parabola which is symmetric about the y-axis and passes through the point $(2,-3)$ is:

(A) $4x^2 = -3y$

(B) $4x^2 = 3y$

(C) $3x^2 = 4y$

(D) $3x^2 = -4y$

---

66. Consider the triangle with vertices $(0,0)$, $(5,0)$ and $(2,3)$. If scaling of 3 units is applied along both x-axis and y-axis, the new coordinates are:

(A) $(0,0),(5,0),(5,6)$

(B) $(0,0),(8,0),(5,6)$

(C) $(0,0),(2,0),(-1,0)$

(D) $(0,0),(8,0),(-1,0)$

---

67. Match the postulates in List-I with List-II.

List - I	List - II
(a) Identity law	(i) $A + \overline{A} = 1$ and $A.\overline{A} = 0$
(b) Null law	(ii) $A + A = A$ and $A.A = A$
(c) Complement law	(iii) $A + 0 = A$ and $A.1 = A$
(d) Idempotent law	(iv) $A + 1 = 1$ and $A.0 = 0$

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

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

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

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

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68. The Boolean function $AB + AC$ is equivalent to:

(A) $AB + AC + BC$

(B) $A'BC' + ABC' + A'BC$

(C) $ABC + A'BC + B'C'$

(D) $ABC + ABC' + AB'C$

---

69. The Boolean expressions $(AB)' = A' + B'$ and $(A+B)' = A'B'$ represent

(A) Absorption law

(B) Distributive law

(C) De Morgan's law

(D) Idempotent law

---

70. Match List-I with List-II.

List - I	List - II
(a) sin (π/3)	(i) $\frac{1}{\sqrt{2}}$
(b) sin (π/4)	(ii) $\frac{1}{2}$
(c) sin (π/6)	(iii) $\frac{\sqrt{3}}{2}$
(d) sin (π/2)	(iv) 1

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

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

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

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

---

71. The general solution of $2\cos\theta - \sqrt{3} = 0$ is

(A) $\theta = n\pi + (-1)^n \frac{\pi}{6}$

(B) $\theta = 2n\pi \pm \frac{\pi}{6}$

(C) $\theta = 2n\pi \pm \frac{\pi}{3}$

(D) $\theta = n\pi + (-1)^n \frac{\pi}{3}$

---

72. In a right angled isosceles triangle $\triangle ABC$, right angle at C, if side $a = 2$, then sides b and c are respectively

(A) $2\sqrt{2}$, 2

(B) $\sqrt{2}$, 2

(C) 2, $\sqrt{2}$

(D) 2, $2\sqrt{2}$

---

73. The value of $\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right) + \sin^{-1}\left(-\frac{1}{2}\right)$ is

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

(B) $\frac{\pi}{2}$

(C) $\frac{3\pi}{4}$

(D) $\frac{3\pi}{2}$

---

74. Two dice are thrown and the sum of the numbers which come up is noted. Among the following events: A: sum is even, B: sum is multiple of 3, C: sum is less than 4, D: sum is greater than 11. Which pair of events are mutually exclusive?

(A) A and B

(B) A and C

(C) C and D

(D) B and D

---

75. Two students A and B appear for an exam. Probability that A passes is 0.05, B passes is 0.10, and both pass is 0.02. Find probability that neither passes.

(A) 0.87

(B) 0.98

(C) 1

(D) 0.11

76. The probability of selecting a man from a crowd containing 20 men and 33 women is

(1) $\frac{20}{33}$

(2) $\frac{33}{20}$

(3) $\frac{20}{53}$

(4) $\frac{33}{53}$

---

77. Three cards are drawn successively without replacement from a pack of 52 well shuffled cards. What is the probability that first two cards are kings and the third card drawn is an ace?

(1) $\frac{4}{52}$

(2) $\frac{3}{51}$

(3) $\frac{4}{50}$

(4) $\frac{2}{5525}$

---

78. A man is known to speak truth 3 out of 4 times. He throws a die and reports that it is a six. Find the probability that it is actually six.

(1) $\frac{1}{8}$

(2) $\frac{2}{8}$

(3) $\frac{3}{8}$

(4) $\frac{1}{2}$

---

79. The variance of 25 observations is 6. If each observation is multiplied by 3, then the new variance of the resulting observations is

(1) 56

(2) 50

(3) 54

(4) 36

---

80. A committee of two persons is selected from two men and two women. What is the probability that the committee will have one man?

(1) $\frac{1}{3}$

(2) $\frac{2}{3}$

(3) 1

(4) $\frac{4}{3}$

---

81. The Boolean expressions

$$(AB)' = A' + B'$$

and

$$(A + B)' = A'B'$$

represent

(1) Absorption law

(2) Distributive law

(3) De Morgan's law

(4) Idempotent law

---

82. Match List-I with List-II.

List-I	List-II
$(a)\ \sin\left(\frac{\pi}{3}\right)$	$(i)\ \frac{1}{\sqrt{2}}$
$(b)\ \sin\left(\frac{\pi}{4}\right)$	$(ii)\ \frac{1}{2}$
$(c)\ \sin\left(\frac{\pi}{6}\right)$	$(iii)\ \frac{\sqrt{3}}{2}$
$(d)\ \sin\left(\frac{\pi}{2}\right)$	$(iv)\ 1$

Codes:

(1) a - iii, b - i, c - ii, d - iv

(2) a - iv, b - ii, c - i, d - iii

(3) a - iii, b - ii, c - i, d - iv

(4) a - iv, b - ii, c - iii, d - i

---

83. The general solution of

$$2\cos\theta - \sqrt{3} = 0$$

is

(1) $\theta = n\pi + (-1)^n \frac{\pi}{6},\ n \in \mathbb{Z}$

(2) $\theta = 2n\pi \pm \frac{\pi}{6},\ n \in \mathbb{Z}$

(3) $\theta = 2n\pi \pm \frac{\pi}{3},\ n \in \mathbb{Z}$

(4) $\theta = n\pi + (-1)^n \frac{\pi}{3},\ n \in \mathbb{Z}$

---

84. In a right angled isosceles triangle ΔABC, right angle at C, if side $a = 2$, then sides b and c are respectively

(1) $2\sqrt{2}$, 2

(2) $\sqrt{2}$, 2

(3) 2, $\sqrt{2}$

(4) 2, $2\sqrt{2}$

85.

$$\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right) + \sin^{-1}\left(-\frac{1}{2}\right) =$$

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

(2) $\frac{\pi}{2}$

(3) $\frac{3\pi}{4}$

(4) $\frac{3\pi}{2}$

86.

- A: The sum is even.
- B: The sum is a multiple of 3.
- C: The sum is less than 4.
- D: The sum is greater than 11.

Which pair of events are mutually exclusive?**Two dice are thrown and the sum of the numbers which come up on the dice is noted. Among the following events:**

- **A: The sum is even.**
- **B: The sum is a multiple of 3.**
- **C: The sum is less than 4.**
- **D: The sum is greater than 11.**

Which pair of events are mutually exclusive?

(1) A and B
(2) A and C
(3) C and D
(4) B and D

---

87. The average of 5 numbers is 27. If one number is excluded, the average becomes 25. The excluded number is:

(1) 30
(2) 35
(3) 45
(4) 25

---

88. If the mean of the distribution is 5**, then the value of** P **is:**

x_i	2	4	6	P	10
f_i	3	2	1	4	2

(1) 7
(2) 5
(3) 8
(4) 4

---

89. The arithmetic mean of $1, 2, 3, \ldots, n$ **is:**

(1) $\frac{n+1}{2}$
(2) $\frac{n-1}{2}$

(3) $\frac{n}{2}$

(4) $\frac{2n+1}{2}$

---

90. The algebraic sum of the deviations of a set of n values from their arithmetic mean is:

(1) n

(2) 0

(3) $2n$

(4) None of these

---

91. If the first quartile is 142 and the semi-interquartile range is 18, then the third quartile is:

(1) 160

(2) 124

(3) 178

(4) 151

---

92. The average of squared deviations from mean is called:

(1) Mean Deviation

(2) Variance

(3) Standard Deviation

(4) Coefficient of Variation

---

93. The relation between mean, median and mode for a moderately asymmetrical distribution is:

(1) $\textbf{Mode} = 3\textbf{Median} - 2\textbf{Mean}$

(2) $\textbf{Mode} = 3\textbf{Mean} - 2\textbf{Median}$

(3) $\textbf{Median} = 3\textbf{Mode} - 2\textbf{Mean}$

(4) $\textbf{Mean} = 3\textbf{Median} - 2\textbf{Mode}$

---

94. If an event cannot occur, then its probability is:

(1) 1

(2) $\frac{4}{3}$

(3) $\frac{1}{2}$

(4) 0

---

95. An experiment succeeds twice as often as it fails. The probability of success in the next trial is:

(1) $\frac{1}{3}$

(2) $\frac{2}{3}$

(3) 1

(4) 0

---

96. If $P(A) = 0.8$, $P(B) = 0.5$ and $P(B|A) = 0.4$, then the value of $P(A|B)$ is:

(1) 0.32

(2) 0.64

(3) 0.16

(4) 0.25

---

97. If the mode of a distribution is 18 and the mean is 24, then the median is:

(1) 18

(2) 24

(3) 22

(4) 21

---

98. The range of the data 12, 25, 15, 18, 35, 11, 45, 33, 22, 10 is:

(1) 10

(2) 45

(3) 35

(4) 11

---

99. The standard deviation of a distribution is 5. If each observation is increased by 2, then the new standard deviation will be:

(1) 5

(2) 7

(3) 3

(4) 10

---

100. For a symmetrical distribution:

(1) Mean > Median > Mode

(2) Mean < Median < Mode

(3) Mean = Median = Mode

(4) None of these
