PGCET-2022- MCA

VERSION CODE	Maximum Marks : 100 Total Duration : 150 Minutes Maximum Time For Answering : 120 Minutes Subject : MCA Date : 20-11-2022 Time : 10.30 am to 12.30 pm	Serial Number :
B1	**MENTION YOUR PGCET NUMBER**	Subject Code **P-MCA**

P-MCA-B1

Dos:

1. This question booklet is issued to you by the invigilator **after 10 20 am**
2. Check whether the PGCET 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 **3rd Bell rings at 10 30 am, 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 80 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 3rd Bell is rung at 10 30 am, 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**

CORRECT METHOD				WRONG METHOD							
(A) ● (C) (D)	⊗	(B)	(C)	(D)	(A)	(B)	(C)	(D)	(A)	●	●	(D)
	(A)	●	(C)	(D)	(A)	●	(C)	(D)				

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. **Last bell will ring at 12.30 pm stop marking on the OMR answer sheet.**
8. Hand over the **OMR answer sheet** to the room invigilator as it is.
9. After separating the top sheet (KEA copy), the invigilator will return the bottom sheet replica (candidate's copy) to you to carry home for self-evaluation.

Marks Distribution

Part -1: 60 Questions carry one mark each (1 to 60)

Part -2: 20 Questions carry two marks each (61 to 80)

MCA

PART - 1

Each question carries one mark. (60 × 1 = 60)

1. Where is the oldest music college of Madhya Pradesh 'Madhav Sangeet College' located?
(A) Raipur (B) Indore (C) Bhopal (D) Gwalior

2. The Reserve Bank of India was established in the year
(A) 1930 (B) 1935 (C) 1947 (D) 1951

3. In India non-agricultural Income Tax is
(A) Levied by the Centre and fully distributed among the States
(B) Levied by the States
(C) Levied and appropriated by the Centre
(D) Levied by the Centre and shared with the States

4. Which one of the following states is industrially the most advanced state in India?
(A) Punjab (B) Tamil Nadu (C) Gujarat (D) Maharashtra

5. Golden Quadrilateral project of India joins _____
(A) Delhi – Mumbai – Chennai – Kolkata (B) Delhi – Jhansi – Bengaluru – Kanyakumari
(C) Srinagar – Delhi – Kanpur – Kolkata (D) Porbandar – Bengaluru – Kolkata – Kanpur

6. Select the pair that best expresses a relationship similar to that expressed in the original pair
Petal : Flower
(A) Salt : Pepper (B) Tyre : Bicycle (C) Base : Ball (D) Sandals : Shoes

7. Mark the correct meaning out of the four choices: Cartographer
(A) One who draws cartoons (B) One who draws maps
(C) One who engraves on stones (D) One who erects monuments

8. Pick out the best one that completes the incomplete statement.
I was so annoyed that _____
(A) I completely lost my temper (B) I became very enthusiastic
(C) I completely lost my indifference (D) I became very energetic

9. Choose the word that is nearly the same in meaning to the word in capital letters:
NARCISSISM
(A) Excessive love of oneself (B) Excessive hatred of oneself
(C) Love for humankind (D) Excessive love for animals

10. Consider the following sentences:
I. A cannon is a weapon used to kill enemies
II. A canon is an accepted principle
(A) Only sentence I is correct (B) Only sentence II is correct
(C) Both I and II are correct (D) Neither I nor II is correct

B1

11. Value of $b^2 - 4ac$ determines nature of roots, for real and distinct roots, $b^2 - 4ac$ is

(A) less than 0 (B) equal to 0

(C) greater than 0 (D) none of the above

12. If one root of the quadratic equation $2x^2 + kx - 6 = 0$ is 2, the value of k is

(A) 1 (B) −1 (C) 2 (D) −2

13. If $\log_{10}^{5} + \log_{10}(5x + 1) = \log_{10}(x + 5) + 1$, then x is equal to

(A) 1 (B) 3 (C) 5 (D) 10

14. If $(9^x)^3 = 3^x$, then the value of x is

(A) 14 (B) 16 (C) 15 (D) 17

15. The first term of a GP is 1. The sum of the 3rd and 5th terms is 90. Then the common ratio is

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

16. Let $A = \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$, then $|2A|$ is equal to

(A) $4\cos 2\theta$ (B) 1 (C) 2 (D) 4

17. The inverse of the matrix $\begin{bmatrix} -0.5 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ is

(A) $\begin{bmatrix} 0.5 & 0 & 0 \\ 0 & -4 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ (B) $\begin{bmatrix} 0.5 & 0 & 0 \\ 0 & -4 & 0 \\ 0 & 0 & -1 \end{bmatrix}$

(C) $\begin{bmatrix} -2 & 0 & 0 \\ 0 & 0.25 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ (D) $\begin{bmatrix} 2 & 0 & 0 \\ 0 & -0.25 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

18. The number of elements in the power set P(S) of the set S = {1,2,3} is

(A) 4 (B) 8 (C) 2 (D) 10

19. The coefficient of x^3y^4 in $(2x + 3y^2)^5$ is

(A) 360 (B) 720 (C) 240 (D) 1080

20. Everybody in a room shakes hands with everybody else. The total number of handshakes is 45. The total number of persons in the room is

(A) 9 (B) 10 (C) 5 (D) 15

21. If A and B are mutually exclusive events given that P(A) = 3/5 and P(B) = 1/5, then P(A or B) is

(A) 0.8 (B) 0.6 (C) 0.4 (D) 0.2

22. Two lines are said to be parallel if the difference of their slope is
(A) −1 (B) 0 (C) 1 (D) 2

23. The center of the ellipse $\frac{(x-y-2)^2}{9}+\frac{(x-y)^2}{16}=1$ is
(A) (0, 0) (B) (0, 1) (C) (1, 0) (D) (1, 1)

24. The equation of a hyperbola with foci on the X- axis is
(A) $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ (B) $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$
(C) $x^2+y^2=(a^2+b^2)$ (D) $x^2-y^2=(a^2+b^2)$

25. In Boolean algebra, $(A\cdot\bar{A})+A=$ _____
(A) $\bar{A}$ (B) 0 (C) $\bar{A}$ (D) 1

26. Which of the following Boolean algebraic expression is incorrect?
(A) $\bar{A}+\bar{A}B=A+B$ (B) $A+AB=B$
(C) $(A+B)(A+C)=A+BC$ (D) $(A+\bar{B})(A+B)=A$

27. If $\tan A=\frac{1}{2}$ and $\tan B=\frac{1}{3}$, then the value of A + B is
(A) $\pi/6$ (B) π (C) 0 (D) $\pi/4$

28. Standard deviation is defined as
(A) $\sqrt{\frac{\sum f(x-\bar{x})^2}{\sum f}}$ (B) $\sqrt{\frac{\sum f(x-\bar{x})}{\sum f}}$ (C) $\frac{\sum f(x-\bar{x})^2}{\sum f}$ (D) None of the above

29. If the correlation coefficient is 0, the two regression lines are
(A) Parallel (B) Perpendicular
(C) Coincident (D) Inclined at 45° to each other

30. _____ indicates peakness of the frequency distribution
(A) Kurtosis (B) Skewness
(C) Normal distribution (D) Exponential distribution

31. Which of the following devices provides the communication between the computer and outer world?
(A) Drivers (B) Storage (C) CPU (D) Input-Output

32. Which service allows a user to login to another computer via internet?
(A) FTP (B) Telnet (C) e-mail (D) SMTP

33. Which of the following is not a system software?
(A) Operating system (B) Assembler
(C) SQL (D) Compiler

34. URL stands for
(A) Uniform Resource Link (B) Universal Resource Link
(C) Uniform Resource Locator (D) Universal Resource Locator

B1

35. RDBMS consists of _____
(A) Collection of Tables
(B) Collection of Keys
(C) Collection of Fields
(D) Collection of Records

36. Will the following script work?
Var st = (function (x) {return x*x;} (10));
(A) Syntax error
(B) Yes, it works
(C) Memory leak
(D) Exception will be thrown

37. The oldest database model is
(A) Network (B) Physical (C) Hierarchical (D) Relational

38. Hexadecimal equivalent of $(255)_{10}$ is _____
(A) FF (B) EF (C) FE (D) FA

39. Find the remainder of the following expression 111101 - 1001
(A) 1010 (B) 0110 (C) 0111 (D) 0101

40. Addition of 28 and 18 using 2's complement method results in _____
(A) 1010101
(B) 0101110
(C) 0100011
(D) 011000

41. In operating systems which of the following is not a CPU scheduling algorithm?
(A) FCFS (B) Round Robin (C) LRU (D) SJF

42. In a time sharing operating system, when the time slot assigned to a process is completed, the process switches from the current state to _____?
(A) Suspended
(B) Ready state
(C) Blocked
(D) Terminated

43. The purpose of Banker's algorithm is
(A) Deadlock avoidance and detection
(B) To solve critical section problem
(C) To solve dining philosopher problem
(D) To decrease the number of page faults

44. In real time operating system _____
(A) Kernel is not required
(B) Task must be serviced by its deadline period
(C) All processes have the same priority
(D) Process scheduling can be done only once

45. The core of LINUX operating system is
(A) Terminal
(B) I/O
(C) Kernel
(D) Command

46. Arrange the given words in meaningful sequence and choose the correct sequence from the given alternatives

1. Atomic age 2. Metallic age 3. Stone age 4. Alloy age

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

47. Which one of the given responses would be a meaningful order of the following words?

1. Important 2. Impart 3. Improvise 4. Improve

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

48. Study the statement given, choose the option which indicates a valid argument containing logically related statements that is, where the third statement is a conclusion drawn from the preceding two statements

(A) Apples are not sweets (B) Some apples are sweets

(C) All sweets are tasty (D) Some apples are not tasty

(E) No apple is tasty

(A) EAC (B) CEA (C) BDC (D) CBD

49. Find out the missing number in the following series $\frac{2}{\sqrt{5}}, \frac{3}{5}, \frac{4}{5\sqrt{5}}, \frac{5}{25}, ?$

(A) $\frac{6}{5\sqrt{5}}$ (B) $\frac{6}{25\sqrt{5}}$ (C) $\frac{6}{125}$ (D) $\frac{7}{25}$

50. In a certain code, CAT is written as SATC and DEAR is written as SEARD. How would SING be written in that code?

(A) BGINS (B) SGNIS (C) SINGS (D) GNISS

51. A Person's present age is two-fifth of the age of his mother. After 8 years, he will be one half of the age of his mother. How old is the mother at present?

(A) 40 years (B) 48 years (C) 32 years (D) 36 years

52. Kamal is facing south. He turns 135° in the anti-clockwise direction and then 180° in the clockwise direction. What direction is he facing now?

(A) North (B) South - West (C) East (D) North - West

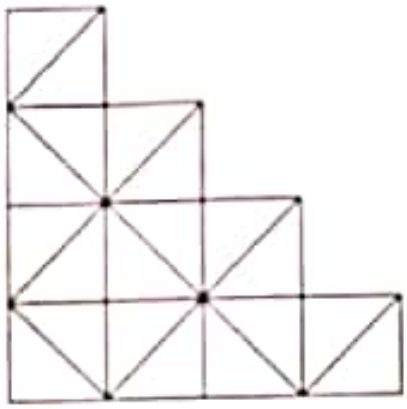
53. Find out the missing number from the given options

28	20	7
84	35	12
45	?	9

(A) 15 (B) 18 (C) 20 (D) 25

B1

54. How many squares are there in the following figure?



(A) 14 (B) 16 (C) 22 (D) 12

55. Select the answer figure from the given options to complete the sketch

(A)  (B)  (C)  (D) 

56. Depreciation is loss in value of _____

(A) Final goods (B) Machinery

(C) Capital stock (D) Stock of inventory

57. In which of the following organ, carbohydrate is stored as glycogen?

(A) Intestine (B) Stomach (C) Liver (D) Pancreas

58. India's first navigation satellite RNSS-A was launched from _____

(A) Sriharikota (B) Ahmedabad

(C) Thiruvananthapuram (D) Bengaluru

59. Kalpakkam is famous for _____

(A) Atomic Power Station (B) Defence Laboratory

(C) Rocket Launching Centre (D) Space Centre

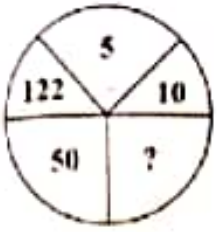
60. Which of the following Indian Missile is surface to surface missile?

(A) Nag (B) Trishul (C) Aakash (D) Prithvi

PART - 2

Each question carries two marks. (20 x 2 = 40)

61. Select the missing number from the given options



(A) 25 (B) 27 (C) 23 (D) 26

62. Select a suitable choice from the answer figures which completes the problem figure

(A)  (B)  (C)  (D) 

63. Interest payment is an item of

(A) Revenue Expenditure (B) Capital Expenditure

(C) Plan Expenditure (D) None of the above

64. Select the correct answer by using the codes given below:

List I (Institutions)	List II (Locations)
P ISRO	1. Thiruvananthapuram
Q IUCAA	2. Pune
R IUAC	3. Bengaluru
S VSSC	4. New Delhi

P Q R S

(A) 3 2 4 1

(C) 2 4 1 3

P Q R S

(B) 1 2 3 4

(D) 3 1 2 4

B1

65. Arrange the parts so as to form a complete and meaningful sentence by choosing the correct combination:

P. and the mediocore students

Q. Opt for science

R. It is believed that only the intelligent

S. Settle for humanities

(A) Q P S R (B) P Q R S (C) S P Q R (D) R Q P S

66. If $\begin{vmatrix} 4 & -4 & 0 \\ a & b+4 & c \\ a & b & c+4 \end{vmatrix} = 0$, then $a + b + c$ is equal to

(A) 41 (B) 116 (C) 628 (D) −4

67. Three circles touch each other externally. The distance between their centres is 5 cm, 6 cm and 7 cm. Find the radii of the circles

(A) 2 cm, 3 cm, 4 cm (B) 3 cm, 4 cm, 1 cm

(C) 2.5 cm, 3 cm, 3.5 cm (D) 1 cm, 2 cm, 4 cm

68. If $\sin^{-1}x + \sin^{-1}y = \pi/2$ then the value of $\cos^{-1}x + \cos^{-1}y$ is

(A) $\pi/2$ (B) π (C) 0 (D) $2\pi/3$

69. If the point (x, y) is equidistant from the points (2a, 0) and (0, 3a) where $a > 0$ then which of the following is correct?

(A) $2x - 3y = 0$ (B) $3x - 2y = 0$

(C) $4x - 6y + 5a = 0$ (D) $4x - 6y - 5a = 0$

70. 6 men and 4 women are to be seated in a row so that no two women sit together. The number of ways they can be seated is

(A) 604800 (B) 17280 (C) 120960 (D) 518400

71. A buys a lottery ticket in which the chance of winning is 1/10; B has a ticket in which his chance of winning is 1/20. The chance that at least one of them wins is

(A) 1/200 (B) 29/200 (C) 30/200 (D) 170/200

72. Average scores of three batsmen A, B,C are 40, 45 and 55 respectively and their standard deviations are 9, 11, 16 respectively. Which batsman is more consistent?

(A) A (B) B (C) C (D) A, B and C

73. The result of the following addition of two BCD numbers 1001 + 0100 = ?

(A) 0010 1011 (B) 0001 0011 (C) 1010 1111 (D) 0101 0001

74. The excess - 3 code for 9 is _____

(A) 1100 (B) 1011 (C) 1110 (D) 1111

75. Network operating system runs on

(A) Server (B) Every system on the network

(C) Both server and systems (D) None of the above

B1

76. At a particular time the value of counting semaphore is 10. It will become 7 after :

(A) 5V operations and 2P operations
(B) 3P operations
(C) 13P operations and 10V operations
(D) 3V operations

77. The operating system maintains a _____ table that keeps track of frames

(A) Frame
(B) Page
(C) Mapping
(D) Memory

78. If A 5 B means 'A is the husband of B'
If A 4 B means 'A is the sister of B' and
A 3 B means 'A is the son of B', then which of the following shows that A is the daughter of B?

(A) A 4 C 3 B
(B) C 3 B 4 A
(C) B 5 C 3 A
(D) C 3 B 5 C 4 A

79. In a group of 15 people, 7 read French, 8 read English while 3 of them read none of these two. How many of them read French and English both?

(A) 0
(B) 3
(C) 4
(D) 5

80. If (a • b) stands for $(a + b)^2$ and (a ⊕ b) stands for $(a - b)^2$ then the value of (a • b) + (a ⊕ b) is

(A) $2a^2 + b^2$
(B) $a^2 + 2b^2$
(C) $2(a^2 + b^2)$
(D) $2a^2 + 3b^2$