PGCET-2021 - MCA

VERSION CODE	Maximum Marks : 100 Total Duration : 150 Minutes Maximum Time For Answering : 120 Minutes Subject: MCA DATE : 14-11-2021 TIME : 10.30 am to 12.30 pm	Serial Number : 162599
B1	MENTION YOUR PGCET NUMBER	Subject Code P-MCA

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.

P-MCA B1

DON'Ts:

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.**

ಸರಿಯಾದ ಕ್ರಮ CORRECT METHOD	ತಪ್ಪು ಕ್ರಮಗಳು WRONG METHOD
(A) ● (C) (D)	(A) (B) (C) (D) (A) (B) (C) (D) (A) ● ● (D)
	(A) (B) (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)

2022/6/30 16:19

B1

MCA

PART - 1

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

1. A book titled "Future of Higher Education – Nine Mega Trends" is authored by

(A) V Pattabhi Ram

(B) Urjit Patel

(C) RC Bhargava

(D) M Venkaiah Naidu

2. Who developed the world's most affordable COVID-19 Diagnostic kit "Corosure"?

(A) IIT Madras

(B) IIT Delhi

(C) IIT Kanpur

(D) AIIMS Nagpur

3. Who has provided drones named "Bharat" to the Indian Army to provide accurate surveillance along the Line of Actual Control in high altitude and mountainous terrains of Eastern Ladakh?

(A) ISRO

(B) Indian Navy

(C) DRDO

(D) US Navy

4. Who has signed an MoU with the Department of MSME and mines of Government of Karnataka to promote arts, crafts and handloom sector of Karnataka?

(A) Amazon

(B) Flipkart

(C) Reliance

(D) Paytm

5. First Indian woman to become miss universe

(A) Reita Faria

(B) Sushmita Sen

(C) Lara Dutta

(D) Aishwarya Rai

6. The synonym of IRONIC is

(A) Inflexible

(B) Bitter

(C) Good-natured

(D) Disguisedly sarcastic

7. The antonym of COMFORT is

(A) Uncomfort

(B) Miscomfort

(C) Discomfort

(D) None of these

Space For Rough Work

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8. Sail is to sailor as pick is to

(A) Choose

(B) Tool

(C) Nose

(D) Picker

9. Gift of the gab

(A) Lucky

(B) A big surprise

(C) Honest person

(D) To have a talent for speaking

10. A place where money is coined

(A) Mint

(B) Press

(C) Treasury

(D) Bank

11. The circumference of the circle $x^2 + y^2 - 18x - 16y + 120 = 0$ is

(A) 5π

(B) 10π

(C) 25π

(D) $10\pi^2$

12. If p, q, r are in A.P., then the value of $\begin{vmatrix} x+4 & x+9 & x+p \\ x+5 & x+10 & x+q \\ x+6 & x+11 & x+r \end{vmatrix}$ is

(A) $x + 15$

(B) $x + 20$

(C) $x + p + q + r$

(D) None of these

13. The inverse of a symmetric matrix is a

(A) Diagonal matrix

(B) Scalar matrix

(C) Symmetric matrix

(D) Skew-symmetric matrix

14. If $\begin{bmatrix} x+y+z \\ x+y \\ y+z \end{bmatrix} = \begin{bmatrix} 9 \\ 5 \\ 7 \end{bmatrix}$ then the value of (x, y, z) is

(A) (4, 3, 2)

(B) (3, 2, 4)

(C) (2, 3, 4)

(D) (4, 2, 3)

15. If the angle between two lines is $\frac{\pi}{4}$ and slope of one of the lines is $\frac{1}{2}$, then the slope of the other line is

(A) -2

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

(C) 1

(D) 3

Space For Rough Work

16. The value of $\cos1^\circ . \cos2^\circ . \cos3^\circ ..... \cos180^\circ$ is

(A) $\frac{1}{\sqrt{2}}$ (B) 0

(C) 1 (D) −1

17. If $\tan\theta = \frac{1}{2}$ and $\tan\phi = \frac{1}{3}$ then the value of $\theta + \phi$ is

(A) $\frac{\pi}{6}$ (B) π

(C) 0 (D) $\frac{\pi}{4}$

18. If $2\tan^{-1}(\cos x) = \tan^{-1}(2\,\text{cosec}\,x)$ then the value of x is

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

(C) $\frac{\pi}{4}$ (D) $\frac{\pi}{2}$

19. The value of $\cos\left(\frac{1}{2}\cos^{-1}\frac{1}{8}\right)$ is

(A) $\frac{3}{4}$ (B) $\frac{-3}{4}$

(C) $\frac{1}{16}$ (D) $\frac{1}{4}$

20. In how many ways we can form a garland using 6 different flowers?

(A) 720 (B) 120

(C) 60 (D) 6

21. If the probability of rain on any given day in city X is 50%, what is the probability that it rains on exactly 3 days in a 5-day period?

(A) $\frac{8}{125}$ (B) $\frac{2}{25}$

(C) $\frac{5}{16}$ (D) $\frac{8}{25}$

22. A small company employs 3 men and 5 women. If a team of 4 employees is to be randomly selected to organize the company retreat, what is the probability that the team will have exactly 2 women?

(A) $\frac{1}{14}$ (B) $\frac{1}{7}$

(C) $\frac{2}{7}$ (D) $\frac{3}{7}$

23. If $\log_a(ab) = x$ then the value of $\log_b(ab)$ is

(A) $\frac{x}{x+1}$ (B) $\frac{x}{x-1}$

(C) $\frac{x}{1-x}$ (D) $\frac{1}{x}$

24. The length of transverse axis of the hyperbola $3x^2 - 4y^2 = 32$ is

(A) $\frac{3}{32}$ (B) $\frac{64}{3}$

(C) $\frac{8\sqrt{2}}{\sqrt{3}}$ (D) $\frac{16\sqrt{2}}{\sqrt{3}}$

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25. If eccentricity $e = \frac{1}{3}$, then the ratio of the major axis to the minor axis of the ellipse is

(A) $3 : 2\sqrt{2}$ (B) $9 : 8$

(C) $2\sqrt{2} : 3$ (D) $8 : 9$

26. Focus of the parabola $y^2 - 8x - 32 = 0$ is

(A) (2, 0) (B) (−2, 0)

(C) (0, 2) (D) (4, 0)

27. A frequency distribution can be presented graphically by a

(A) Pie diagram

(B) Histogram

(C) Pictogram

(D) Cartogram

28. If the coefficient of variation and mean of a frequency distribution are 5% and 125 respectively, then the standard deviation is

(A) 0.625

(B) 6.25

(C) 62.5

(D) 625

29. The 3 arithmetic means between 3 and 19 are

(A) 7, 11, 15

(B) 5, 10, 15

(C) 5, 7, 9

(D) 6, 11; 16

30. If $a^x = b^y = c^z$ and $b^2 = ac$ then the value of y is equal to

(A) $\frac{xz}{x+z}$ (B) $\frac{2xz}{x+z}$

(C) $\frac{xz}{2(x-z)}$ (D) $\frac{xz}{2(z-x)}$

31. Structured programming languages such as C, COBOL and FORTRAN were used in which of the following computers?

(A) First Generation Computers

(B) Second Generation Computers

(C) Third Generation Computers

(D) Fourth Generation Computers

32. Modern computers follow a generalised set of instructions to perform any function. What are these instructions better known as?

(A) Language

(B) Instructions

(C) Commands

(D) Programs

33. Which of the following is not an input device of the computer?

(A) Trackball

(B) Image Scanner

(C) Joystick

(D) Sound Card

34. Which of the following are being managed by a database management systems?
(A) Data
(B) Database Engine
(C) Database Schema
(D) All of the Above

35. The system unit of a personal computer typically contains which of the following?
(A) Microprocessor
(B) Disc Controller
(C) Serial Interface
(D) All of the Above

36. The most common method of entering text and numerical data into a computer system is through the use of which of the following?
(A) Plotter
(B) Scanner
(C) Printer
(D) Keyboard

37. Which of the following is not a bitwise operator?
(A) |
(B) ^
(C) .
(D) <<

38. The sign magnitude representation of −1 is _____
(A) 0001
(B) 1110
(C) 1000
(D) 1001

39. Software which allows user to view the webpage is called as _____
(A) Interpreter
(B) Operating system
(C) Internet Browser
(D) Website

40. A program automatically connects to websites and download documents and save them to local drive.
(A) Offline browsers
(B) Web servers
(C) Web downloading utilities
(D) None of these

41. How many bytes are there in 1011 1001 0110 1110 numbers?
(A) 1
(B) 2
(C) 4
(D) 8

42. The binary equivalent of the octal Numbers 13.54 is .....
(A) 1011.1011
(B) 1001.1110
(C) 1101.1110
(D) None of these

43. What else is a command interpreter called?
(A) prompt
(B) kernel
(C) shell
(D) command

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44. BIOS is used

(A) By operating system

(B) By compiler

(C) By interpreter

(D) By application software

45. What do you mean by one to many relationships?

(A) One class may have many teachers

(B) One teacher can have many classes

(C) Many classes may have many teachers

(D) Many teachers may have many classes

46. If in a certain language CARROM is coded as BZQQNL, which word will be coded as HORSE?

(A) IPSTF (B) GNQRD

(C) FTSPI (D) DRQNG

47. Find out the missing number in the following series:

6, 11, 21,? 56, 81

(A) 42 (B) 36

(C) 91 (D) 51

48. In a group of cows and hens, the number of legs are 14 more than twice the number of heads. The number of cows is

(A) 5 (B) 7

(C) 10 (D) 12

49. A man starts from a point, walks 2km towards north, turns towards his right and walks 2 km, turns right again and walks. What is the direction now he is facing?

(A) South (B) East

(C) North (D) West

50. There are five different houses P, Q, R, S, T in a row. P is to the right of Q and T is to the left of R and right of P, Q is to the right of S. Which of the houses is in the middle?

(A) P (B) Q

(C) R (D) S

51. A is B's brother, C is A's mother, D is C's father, E is B's son. How is D related to E?

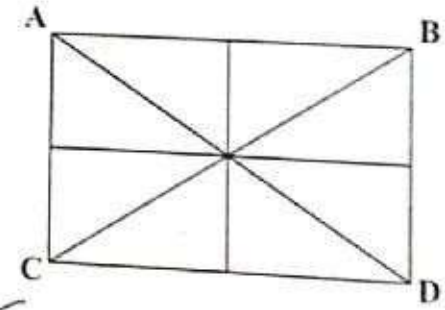
(A) Grandson

(B) Great Grandson

(C) Grandfather

(D) Great Grandfather

52. How many triangles are there in the following figure?



(A) 16 (B) 14

(C) 8 (D) 12

Space For Rough Work

53. If '+' means '÷', '−' means '×', '÷' means '+' and '×' means '−' then 63 × 24 + 8 ÷ 4 + 2 − 3 = ?

(A) 54 (B) 66

(C) 186 (D) 48

54. Find the missing number in the following:

$$\begin{bmatrix} 2 & 3 & 1 \\ 1 & 2 & -1 \\ ? & 3 & 4 \end{bmatrix}$$

(A) 5

(B) 2

(C) 1

(D) 4

55. Find the odd man out from

1, 4, 9, 16, 19, 36, 49

(A) 9

(B) 16

(C) 19

(D) 49

56. First Indian Governor General

(A) C. Rajagopalachari

(B) Dr. Rajendra Prasad

(C) Jawaharlal Nehru

(D) W.C. Banerjee

57. Which country has largest Navy in military?

(A) India

(B) China

(C) USA

(D) Russia

:h bank has launched a digital solution, n in Seconds" for instant disbursement of retail Loans?

(A) HDFC Bank

(B) SBI Bank

(C) YES Bank

(D) ICICI Bank

59. Which state Health Minister K.K Shailaja was honoured by the United Nations for her efforts to fight the corona virus pandemic in her state?

(A) Tamil Nadu

(B) Kerala

(C) Karnataka

(D) Andhra Pradesh

60. Which day is celebrated as International Day of Yoga?

(A) 18th April

(B) 31st May

(C) 5th June

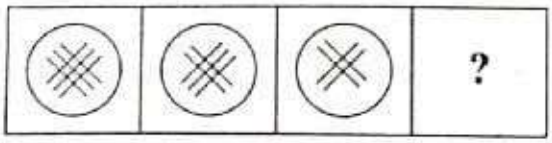
(D) 21st June

B1

PART - 2

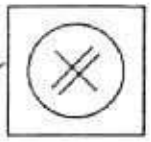
Each question carries two marks. (20 × 2 = 40)

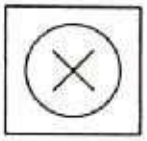
61. Find the missing figure to complete the series



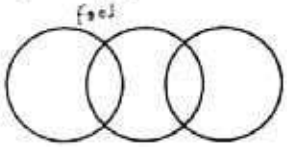
(A) 

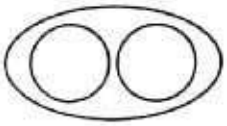
(B) 

(C) 

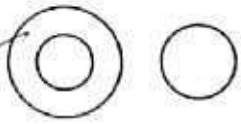
(D) 

62. Identify the diagram that best represents the relationship among classes given below:
Food, Curd, Spoons

(A) 

(B) 

(C) 

(D) 

63. A person who enters without any invitation

(A) Thief

(B) Burglar

(C) Nandal

(D) Intruder

64. Which country hosted the 2019 cricket world cup?

(A) England

(B) Australia

(C) India

(D) China

65. Which one of the following was the Eighth Five-Year Plan period in India?

(A) 1990 – 1995

(B) 1992 – 1997

(C) 1993 – 1998

(D) 1994 – 1999

66. If p, q, r are in A.P., a is G.M. between p and q and b is G.M. between q and r, then a^2, q^2, b^2 are in

(A) A.P.

(B) G.P.

(C) H.P.

(D) None of these

67. In how many ways can the letters of the word "CORPORATION" be arranged so that vowels always occupy even places?

(A) 120

(B) 720

(C) 2700

(D) 7200

68. If A and B are the coefficients of x^n in the expansion of $(1 + x)^{2n}$ and $(1 + x)^{2n-1}$ then

(A) A = B

(B) 2A = B

(C) A = 2B

(D) AB = 2

69. If the equation of a circle is $(4a - 3)^2 x^2 + a^2 y^2 + 6x - 2y + 2 = 0$, then its centre is

(A) (3, −1)

(B) (3, 1)

(C) (−3, 1)

(D) (−3, −1)

70. There are 5 pairs of shoes in a cupboard from which 4 shoes are picked at random. The probability that there is at least one pair is

(A) $\frac{8}{21}$ (B) $\frac{11}{21}$

(C) $\frac{13}{21}$ (D) $\frac{12}{31}$

71. The value of $\cos^2 x + \cos^2\left(x + \frac{\pi}{3}\right) + \cos^2\left(x - \frac{\pi}{3}\right)$ is

(A) zero (B) 1

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

72. If the system of linear equations $x + 2ay + az = 0$; $x + 3by + bz = 0$ and $x + 4cy + cz = 0$ has a non-zero solution, then a, b, c

(A) satisfy $a + 2b + 3c = 0$

(B) are in A.P.

(C) are in G.P.

(D) are in H.P.

73. A set of microinstructions for a single machine instruction is called _____

(A) Program

(B) Command

(C) Micro program

(D) Micro command

74. Which one of the following given statements possibly contains the error?

(A) select * from emp where empid = 10003;

(B) select empid from emp where empid = 10006;

(C) select empid from emp;

(D) select empid where empid = 1009 and Lastname = 'GELLER'.

B1

75. In the following Query, which of the following can be placed in the Query's blank portion to display the salary from highest to lowest amount, and sorting the employees name alphabetically?

SELECT * FROM instructor

ORDER BY salary _____ , name _____ :

(A) Ascending, Descending

(B) Asc, Desc

(C) Desc, Asc

(D) All of the above

76. Which of the following is not application software?

(A) Windows 7

(B) WordPad

(C) Photoshop

(D) MS-Excel

77. Which of the following devices usually come with touchscreens?

(A) Nintendo Game Consoles

(B) Electronic Voting Machines

(C) Point of Sale Systems

(D) All of the above

78. This question contains two statements followed by two conclusions numbered I and II. You have to consider the 2 statements to be true, even if they seem to be at variance at the commonly known facts, you have to decide which of the given conclusions definitely follow from the given statements

Statement: Some chairs are glasses.
All trees are chairs.

Conclusions: I. Some trees are glasses.
II. Some glasses are trees.

(A) if only I follows

(B) if only II follows

(C) if either I or II follows

(D) if neither I nor II follows

79. If A = 1, FAT = 27, then FAITH = ?

(A) 44

(B) 45

(C) 46

(D) 36

80. If '–' stands for addition, '+' stands for subtraction, '÷' stands for multiplication and '×' stands for division then which one of the following equations is correct?

(A) 25 × 5 ÷ 20 – 27 + 7 = 120

(B) 25 + 5 × 26 – 27 + 7 = 128

(C) 25 + 5 – 20 + 27 × 7 = 95

(D) 25 – 5 + 20 × 27 ÷ 7 = 100