POST GRADUATE COMMON ENTRANCE TEST-2019

DATE	COURSE	TIME
21-07-2019	MCA	10.30 am to 12.30 pm

MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
100	150 Minutes	120 Minutes

MENTION YOUR PGCET NO.					QUESTION BOOKLET DETAILS	
					VERSION CODE	SERIAL NUMBER
					A	194881

DOs :

1. Candidate must verify that the PGCET number & Name printed on the OMR Answer Sheet is tallying with the PGCET number and Name printed on the Admission Ticket. Discrepancy if any, report to invigilator.
2. This question booklet is issued to you by the invigilator after the 2nd bell i.e., after 10.25 am.
3. The Version Code of this Question Booklet should be entered on the OMR Answer Sheet and the respective circle 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.

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 paper seal / polythene bag present on the right hand side of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. This question booklet contains 80 (items) questions and each question will have one statement and four answers. (Four different options / responses.)
2. After the 3rd Bell is rung at 10.30 am., remove the paper seal / polythene bag 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.
3. During the subsequent 120 minutes:
   - Read each question (item) carefully.
   - Choose one correct answer from out of the four available responses (options / choices) given under each question / item. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose only one response for each item.
   - Completely darken / shade the relevant circle with a BLUE OR BLACK INK BALL POINT PEN against the question number on the OMR answer sheet.

ಸರಿಯಾದ ಕ್ರಮ CORRECT METHOD	ತಪ್ಪು ಕ್ರಮಗಳು WRONG METHODS
Ⓐ ● Ⓒ Ⓓ	Ⓐ Ⓑ Ⓒ Ⓓ Ⓐ Ⓑ Ⓒ ✓ Ⓐ ● ● Ⓓ Ⓐ Ⓑ Ⓒ Ⓓ Ⓐ ● Ⓒ Ⓓ

4. 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.
5. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
6. After the last Bell is rung at 12.30 pm, stop marking on the OMR answer sheet and affix your left hand thumb impression on the OMR answer sheet as per the instructions.
7. Handover the OMR ANSWER SHEET to the room invigilator as it is.
8. 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.
9. Preserve the replica of the OMR answer sheet for a minimum period of ONE year.

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. If E and F are events in a sample space such that $P(E \cup F) = 0.8$, $P(E \cap F) = 0.3$ and $P(E) = 0.5$, then $P(F)$ is
   (A) 0.6
   (B) 1
   (C) 0.8
   (D) None of these

2. The area of a circle is 2464 m^2, then the diameter is
   (A) 56 m
   (B) 154 m
   (C) 176 m
   (D) None of these

3. The first principle of mathematical induction is
   (A) Prove for n = 1 or 2 or 3, presume the hypothesis is true for n = m and the prove for n = m + 1
   (B) Presume the hypothesis is true for n = m and the prove for n = m + 1
   (C) Prove for n = 1 or 2 or 3 and prove for n = m + 1
   (D) Prove for n = 1 or 2 or 3, presume the hypothesis is true for n = m

4. What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?
   (A) $-x^2 - 2xy + y^2$
   (B) $x^2 - 2xy - y^2$
   (C) $x^2 + 2xy - y^2$
   (D) $x^2 + 2xy + y^2$

5. If $x - \frac{1}{x} = \sqrt{6}$, then $x^2 + \frac{1}{x^2} =$ _____
   (A) 2
   (B) 4
   (C) 6
   (D) 8

6. If $3x - 7y = 10$ and $xy = -1$, then the value $9x^2 + 49y^2$ is
   (A) 58
   (B) 142
   (C) 104
   (D) –104

Space For Rough Work

7. Find the mean of 50 observations. It is given that mean of 32 of them is 28 and the mean of remaining 18 observation is 30.

(A) 30.24

(B) 28.72

(C) 24.82

(D) 30.32

8. In a class test in English, 10 students scored 75 marks, 12 scored 60 marks, 8 scored 40 marks, 3 scored 30 marks. The mode of their scores is

(A) 75

(B) 30

(C) 60

(D) 25

9. Mean of the following frequency distribution table is

Age in years	14	15	16	17	18
No. of boys	5	8	15	10	2

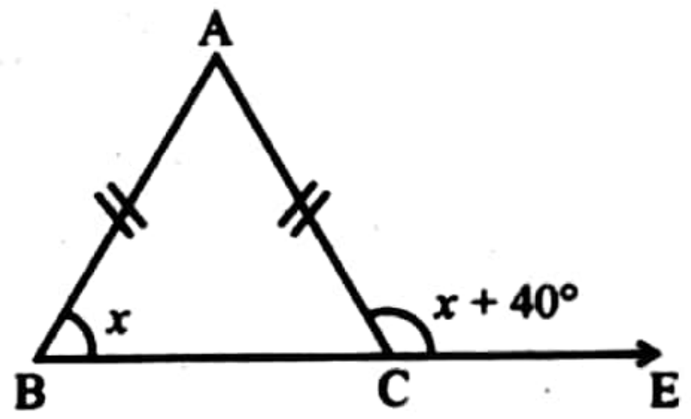
(A) 15.9 years

(B) 17 years

(C) 14.9 years

(D) 16.9 years

10. In the following figure if AB = AC, then find $\angle x$.



(A) 80°

(B) 70°

(C) 60°

(D) 110°

11. The _____ to the curve determines the slope of the curve

(A) Tangent

(B) Perpendicular

(C) Asymptote

(D) Curvature

12. $\log_y x^3 \cdot \log_z y^3 \log_x z^3 =$

(A) 9

(B) 4

(C) 27

(D) 16

Space For Rough Work

13. The logarithm transforms

(A) Addition into multiplication

(B) Differentiation into multiplication

(C) Multiplication into addition

(D) Division into differentiation

14. The transformation in which an object can be shifted to any co-ordinate position in 3D plane are called

(A) Translation

(B) Scaling

(C) Rotation

(D) All of these

15. The Laplace transformations transforms

(A) Differentiation & integration into division & multiplication

(B) Division & multiplication into Differentiation & integration

(C) Differentiation & integration into addition & subtraction

(D) Multiplication & division into addition & subtraction

16. Equation of tangent to the hyperbola $2x^2 - 3y^2 = 6$, which is parallel to the line $y = 3x + 4$ is

(A) $y = 3x + 5$

(B) $y = 3x - 5$

(C) $y = 3x + 5$ and $y = 3x - 5$

(D) None of these

17. The value of $\sin^{-1}(\sin 10)$ is

(A) $3\pi - 10$

(B) $10 - 3\pi$

(C) 10

(D) None of these

18. A person travelled $5/8^{th}$ of distance by train, $1/4^{th}$ by bus and the remaining 15 km by boat. The total distance travelled by him was

(A) 90 km

(B) 120 km

(C) 150 km

(D) 180 km

Space For Rough Work

19. There were only 2 candidates in an election. One got 62% of votes and was elected by a margin of 144 votes. The total number of votes were

(A) 500

(B) 600

(C) 700

(D) 800

20. A student has to secure 40% marks to pass. He got 40 marks and failed by 40 marks. The maximum marks he secured is

(A) 160

(B) 180

(C) 200

(D) 320

21. A process is

(A) program in high level language

(B) contents of main memory

(C) a program in execution

(D) a job in a secondary memory

22. Barcode reader reads patterns of

(A) Printed bits

(B) Printed patterns

(C) Printed styles

(D) None of these

23. Convert of two's complement :

11000010

(A) 10011011

(B) 00111110

(C) 00110011

(D) 11001101

24. What is the semiconductor memory ?

(A) Volatile

(B) Non-volatile memory

(C) Both

(D) None of these

Space For Rough Work

25. What is the memory cell called ?

(A) The basic unit of storage in main memory.

(B) It is a cell.

(C) There is a battery.

(D) None of these

26. IPv6 addresses have a size of

(A) 32 Bits

(B) 64 Bits

(C) 128 Bits

(D) 256 Bits

27. The benefit of using a firewall for LAN's

(A) provides greater security to LAN

(B) strict access control to critical resources

(C) Both (A) and (B)

(D) None of these

28. Convert Binary to octal :

$110111011_{(2)} = ?$

(A) $630_{(8)}$

(B) $750_{(8)}$

(C) $673_{(8)}$

(D) $730_{(8)}$

29. Binary multiplication of

$100_{(2)} \times 101_{(2)}$

(A) $16_{(10)}$

(B) $20_{(10)}$

(C) $23_{(10)}$

(D) $19_{(10)}$

30. If $\sqrt{6} = 2.449$, then the value of $\frac{3\sqrt{2}}{2\sqrt{3}}$ is close to

(A) 1.2245

(B) 0.816

(C) 0.613

(D) 2.449

Space For Rough Work

31. $\frac{2}{3}$ of 4 dozens = _____.

(A) 30

(B) 32

(C) 28

(D) 48

32. In numbers from 1 to 100 the digit "0" appears _____ times.

(A) 9

(B) 10

(C) 11

(D) 12

33. The product of a fractional number and its multiplicative inverse is

(A) 0

(B) 1

(C) number itself

(D) None

34. A man walked 3 km towards north, then 8 km towards south. His position at the end of the walk is

(A) 5 km towards East

(B) 3 km towards South

(C) 8 km towards North

(D) 5 km towards South

35. If the dividend and divisor have like signs, then the quotient will be

(A) Positive

(B) Negative

(C) Zero

(D) None

36. Binary digits are used in Computer because of

(A) Computer clarity

(B) Human clarity

(C) Use of different radix

(D) Computer is brainless

Space For Rough Work

37. A series is given with one letter missing choose the correct alternative from the given ones that will complete the series ?

Y, U, Q, M, I _?_

(A) C

(B) D

(C) G

(D) E

38. In a row of students, Ramesh is 9th from the left and Suman is 6th from the right. When they both inter change their positions, Ramesh will be 15th from the left. What will be the position of Suman from the right ?

(A) 12th

(B) 13th

(C) 15th

(D) 6th

39. The age of the mother is twice that of elder daughter. Ten years later the age of the mother will be 3 times that of the younger daughter. If the difference of ages of two daughters is 15 years, the age of the mother is

(A) 60 years

(B) 55 years

(C) 70 years

(D) 50 years

40. POND is written as RSTL, HEAR is written as

(A) JKLZ

(B) GHIZ

(C) GHIJ

(D) JIGZ

41. The following is one of the first principles of mathematics

(A) The definition of differentiation

(B) The definition of integration

(C) The definition of continuity

(D) None of these

42. How many combinations of two digit numbers having 8 can be made from the following numbers ?

8, 5, 2, 1, 7, 6

(A) 9

(B) 10

(C) 11

(D) 12

43. If 3 + 2 = 7, 4 + 3 = 10, 5 + 4 = 13, then 6 + 5 = ?

(A) 17

(B) 18

(C) 15

(D) 16

Space For Rough Work

44. Multiplication of two polynomials is eased using

(A) Laplace transform

(B) Fourier transform

(C) Fast Fourier transform

(D) Axiomatic transform

45. The area is covered by the two coordinate axes, the ordinates at two x values and the curve $y = f(x)$. The uniform rate of change of y with respect to x is obtained by

(A) Actual graph

(B) Differentiation of f(y) with respect to y

(C) Integration of f(y) with respect to x

(D) Differentiation of f(y) with respect to x.

46. The present president of India is

(A) Shri Nanrendra Modi

(B) Shri Ramanath Kovind

(C) Shrimati Meira Kumar

(D) Shri Pranab Mukharjee

47. A specific state of India has the following characteristics :

Located in the same Latidude as that passes through Rajasthan, It has 80% of area under forest cover of which 12% is in protected area. The following is the state satisfying these characteristics.

(A) Assam

(B) Himachal Pradesh

(C) Arunachal Pradesh

(D) Uttarakhand

48. Consider the following pairs :

	Rivers		Confluence
(1)	East Trishul and Alakananda	–	Karan Prayag
(2)	Mandakini and Kaliganga	–	Rudra Prayag
(3)	Bhagirathi and Kaliganga	–	Vishnu Prayag
(4)	Bhagirathi and Alakananda	–	Dev Prayag

Which of the above pairs have correctly matched :

(A) (1), (2) and (3)

(B) (1), (2) and (4)

(C) (2), (3) and (4)

(D) (1), (2), (3) and (4)

Space For Rough Work

49. Match List-I & II :

	List-I		List-II
(a)	Tropical evergreen forest	(1)	Nilgiri Hills
(b)	Tropical deciduous forest	(2)	Meghalaya
(c)	Tropical Thorn forest	(3)	Rajasthan
(d)	Temperate Evergreen forest	(4)	Kashmir Valley

(a) (b) (c) (d)

(A) (2) (4) (1) (3)

(B) (2) (1) (3) (4)

(C) (1) (2) (3) (4)

(D) (2) (1) (4) (3)

50. The acronym GST means

(A) Good Sale Tax

(B) Goods and Services Tax

(C) General Sale Tax

(D) None of these

51. Dr. APJ Abdul Kamal was _____ president of India.

(A) 10th

(B) 11th

(C) 12th

(D) 13th

52. Karnataka state has _____ (number) administrative districts.

(A) 30

(B) 20

(C) 25

(D) 40

53. In Quacquarellib Symonds Ranking of universities 2019, in the first 200 ranks Indian Universities/institutes have got _____ (number) places.

(A) 2

(B) 3

(C) 4

(D) 5

Space For Rough Work

54. The first Indian sent into space from Indian soil is

(A) Rakesh Sharma

(B) Yuri Gagarin

(C) Kalpana

(D) None of these

55. Day and Night are equal at the

(A) Equator

(B) Poles

(C) Prime Meridian

(D) Antarctic

56. Train is to Engineer as Airplane's to

(A) Fly

(B) Air

(C) Pilot

(D) Wings

57. Heat is to hot as honesty is to

(A) Truthfulness

(B) Trust

(C) Honest

(D) Policy

58. It is very difficult to confuse _____ someone over important matters

(A) in

(B) on

(C) into

(D) onto

59. A person who is filled with excessive extensiasm

(A) Extrovert

(B) Fanatic

(C) Fastidious

(D) Introvert

60. The synonym of Bountiful is

(A) Pretty

(B) Generous

(C) Shameful

(D) Spiritual

Space For Rough Work

PART – 2

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

61. In India as on 2019, there are _____ (number) Indian Institutes of Technology.

(A) 33

(B) 13

(C) 5

(D) 23

62. If one angle is the average of the other two angles and the difference between the greatest and least angles is 60°, then the formed triangle is

(A) An isosceles triangle

(B) An equilateral triangle

(C) A right angled triangle

(D) A right angled isosceles triangle

63. The total cost of 3 prizes is ₹ 2,550. If the value of second price is $3/4^{th}$ of the first and the value of the 3^{rd} prize is 1/2 of the second prize. Find the value of the first prize.

(A) ₹ 900

(B) ₹ 1,500

(C) ₹ 1,200

(D) ₹ 450

64. The product of $\left(\frac{4P}{5}-3\right)$ and $\left(\frac{5P}{8}-6\right)$ is

(A) $\frac{P^2}{2}+\frac{267}{40}P-18$

(B) $\frac{P^2}{2}-\frac{267}{40}P-18$

(C) $\frac{P^2}{2}+\frac{267}{40}P+18$

(D) $\frac{P^2}{2}-\frac{267}{40}P+18$

65. If $x = 3 + \sqrt{5}$, then the value of $(2x^3 - 9x^2 - 10x + 13)$ is

(A) 0

(B) 1

(C) $12\sqrt{5}$

(D) None

66. The value of x obtained from equation $(u)\log_9^3 + (a)\log_2^4 = (10)\log_x^{83}$ will be

(A) 10

(B) 100

(C) 5

(D) 2

Space For Rough Work

67. Eigen values of real symmetric and Hermitian matrices are

(A) Real

(B) Imaginary

(C) Zero

(D) None of these

68. A train passes a telegraph post in 40 seconds moving at the rate of 36 km per hour. Find the length of the train.

(A) 300 m

(B) 400 m

(C) 500 m

(D) 600 m

69. In India, the ranking of Universities/ Institutes is processed by

(A) One of the IITs

(B) National Institutional Ranking Frame Work

(C) National Institutional Ranking Organisation

(D) University Grant Commission

70. Which of the following memories has the shortest access time ?

(A) Cache memory

(B) Magnetic Bubble Memory

(C) Magnetic Core Memory

(D) None of these

71. Which of the following is the smallest measure of storage ?

(A) KB

(B) MB

(C) TB

(D) BYTE

72. Temperature at the foot of the mountain is +5 °C. If fell down by 10 °C at the top of the mountain, the temperature recorded on the top is

(A) +15 °C

(B) –15 °C

(C) +5 °C

(D) –5 °C

73. Information age is determined by

(A) Majority of people using computers

(B) Majority of people working in software industry

(C) Majority of students studying Information Technology

(D) Majority of software industries

Space For Rough Work

74. In 2017 survey the hard working capability of India in the world ranking of 130 countries is

(A) 100

(B) 40

(C) 2

(D) 20

75. The number of ministers in state cabinet of Governments in India is restricted to

(A) 10% of total number of MLAs

(B) 15% of total number of MLAs

(C) 20% of total number of MLAs

(D) None of these

76. If E = 5, PEN = 35, then PAGE = ?

(A) 27

(B) 28

(C) 29

(D) 36

77. In a certain code, BRAIN is written as *%+#× and TIER is written as $#+%. How RENT is written in that code ?

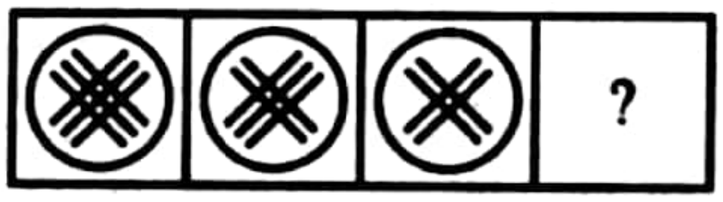
(A) %×#$

(B) %#×$

(C) %+×$

(D) +×%$

78. Find the missing figure to complete the series.



(A) 

(B) 

(C) 

(D) 

79. Which country hosted the 2018 World Robot Conference (W.R.C) ?

(A) India

(B) South Korea

(C) China

(D) Vietnam

80. Who is known as the father of Indian missile technology ?

(A) Dr. U.R. Rao

(B) Dr. A.P.J. Abdul Kalam

(C) Dr. Chidambaram

(D) Dr. Homi Bhabha

Space For Rough Work