POST GRADUATE COMMON ENTRANCE TEST-2017

DATE	COURSE	TIME
02-07-2017	MCA	10.30 a.m. to 12.30 p.m.

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

MENTION YOUR PGCET NO.					QUESTION BOOKLET DETAILS	
					VERSION CODE	SERIAL NUMBER
					B - 1	152130

DO's :

1. Check whether the PGCET No. has been entered and shaded in the respective circles on the OMR answer sheet.
2. This Question Booklet is issued to you by the invigilator after the **2nd Bell i.e., after 10.25 a.m.**
3. The 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 of this question booklet should be entered on the OMR answer sheet and the respective circles should also be shaded completely.
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 a.m., till then;**
   - Do not remove the paper seal / polythene bag of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

CONFIDENTIAL

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 a.m.,** remove the paper seal / polythene bag 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 BALLPOINT PEN against the question number on the OMR answer sheet.**

Correct Method of shading the circle on the OMR answer sheet is as shown below :

4. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
5. After the **last Bell is rung at 12.30 p.m.,** stop marking on the OMR answer sheet and affix your **left hand thumb impression** on the OMR answer sheet as per the instructions.
6. Handover the **OMR ANSWER SHEET** to the room invigilator as it is.
7. 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.
8. 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 carry one mark. **(60 × 1 = 60)**

1. Convert 240° into radians

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

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

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

   (D) $\frac{7\pi}{3}$

2. If $\tan\theta = 3$, θ lies in the 3rd quadrant, the value of $\sec\theta$ is

   (A) $\frac{1}{\sqrt{10}}$

   (B) $\frac{2}{\sqrt{10}}$

   (C) $\frac{-3}{\sqrt{10}}$

   (D) $\frac{-5}{\sqrt{10}}$

3. The roots of $x^2 + x + 1 = 0$ are

   (A) $\pm$ i

   (B) $\pm \frac{1}{2}$ i

   (C) $\frac{-1 \pm \sqrt{3}i}{2}$

   (D) $\frac{\pm\sqrt{3}i}{2}$

4. Value of 7! – 5! is

   (A) 4920

   (B) 4940

   (C) 4900

   (D) 4930

5. How many 4 digit numbers can be formed using the digits 1 to 9 if repetitions are not allowed ?

   (A) 3024

   (B) 3026

   (C) 3040

   (D) 3014

Space For Rough Work

6. The middle term in the expansion of $\left(x+\frac{1}{x}\right)^{10}$ is

(A) ${}^{10}C_1 \frac{1}{x}$

(B) ${}^{10}C_5$

(C) ${}^{10}C_6$

(D) ${}^{10}C_7 x$

7. A die is rolled 3 times. What is the probability of getting 6 atleast once ?

(A) $\frac{125}{216}$

(B) $\frac{91}{216}$

(C) 0

(D) 1

8. The angle between two vectors $\vec{a}$ & $\vec{b}$ with magnitude $\sqrt{3}$ and 4, and $\vec{a} \cdot \vec{b} = 2\sqrt{3}$ is

(A) $\frac{\pi}{6}$

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

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

(D) $\frac{5\pi}{2}$

9. _____ is not an operating system.

(A) Dos

(B) Solaris

(C) Linux

(D) Google

10. _____ is not a data coding technique.

(A) BCD

(B) EBCDIC

(C) ANSI

(D) ASCII

11. ASCII stands for _____ coding technique.

(A) American Standard Codes Information Interchange

(B) American Solution for Coding Information Interchange

(C) American Society for Coding Information Interchange

(D) American Society for Coding Information Interpretation

Space For Rough Work

12. GUI stands for _____.

(A) Gaming Utility Interface

(B) Graphical User Interface

(C) General Utility Interface

(D) Group User Interface

13. E-mail stands for _____ mail.

(A) Electric

(B) Electronic

(C) Engineering

(D) Exchange

14. VOIP means _____.

(A) Very Over Important Person

(B) Very Online Important Person

(C) Voice On Internet Protocol

(D) Voice Over Internet Protocol

15. ANSI stands for _____.

(A) Advance National Standard Institute

(B) American Nation Standard Institute

(C) All Nation Standard Institute

(D) All Nations Squad for Investigation

16. A picture is worth a thousand words : this saying goes correctly with

(A) Coding

(B) Algorithm

(C) Flowchart

(D) Documenting

17. The process of locating an error in a program is known as _____.

(A) Testing

(B) Debugging

(C) Maintenance

(D) Development

Space For Rough Work

18. The process of uploading the data during the occurrence of an event/transaction is known as _____ processing.

(A) offline

(B) online

(C) batch

(D) remote

19. UPS is a _____ device.

(A) Data backup

(B) Processing backup

(C) Power backup

(D) Communication backup

20. Government of India has proposed to implement GST which means _____.

(A) Government Sales Tax

(B) General Service Tax

(C) Goods Service Tax

(D) Government Service Tax

21. Ebola is the name of a _____.

(A) Computer virus

(B) Biological virus

(C) Malware

(D) Software

22. Embedded systems are _____ .

(A) Embedding software into hardware

(B) Embedding hardware into software

(C) Embedding computer into human

(D) Embedding robo into humans

23. POK stands for _____ .

(A) Pakistan Occupied Kashmir

(B) Pakistan Occupied Kazakhstan

(C) Pakistan Occupied Kabul

(D) Pakistan Occupied Kuwait

Space For Rough Work

24. A transistor is a _____ .

(A) Chip

(B) IC

(C) Semi-conductor

(D) Valve

25. The study of earthquake is known as

(A) Selenology

(B) Meteorology

(C) Geology

(D) Seismology

26. A high gravity region in space is known as

(A) red giant

(B) black hole

(C) white hole

(D) pulsar

27. ECG is the abbreviation for

(A) Electrical Cardiogram

(B) Electronic Cardiogram

(C) Electro Cardiogram

(D) Electron Cardiogram

28. An optical instrument used to view distant object is

(A) Microscope

(B) Periscope

(C) Stethoscope

(D) Telescope

29. These clothes _____ for daily use so you can wear them wherever you want.

(A) design

(B) will be designed

(C) are designed

(D) were designed

30. New legislation _____ in Congress but it was not accepted.

(A) was introduced

(B) introduced

(C) will be introduced

(D) introducing

Space For Rough Work

31. The critics say that the review _____ as a book in English.

(A) could be published

(B) can be published

(C) had been published

(D) may be published

32. No clinical studies _____ in this child disease research so far.

(A) had completed

(B) will be completed

(C) have completed

(D) have been completed

33. Identify the error in the sentence.

Ram was/senior to/Sam in college

(A) Ram was

(B) Senior to

(C) Sam in college

(D) No error in sentence

34. Amar was broken _____ from his old friend.

(A) of

(B) in

(C) away

(D) with

35. I was amazed _____ his misbehaviour.

(A) for

(B) at

(C) with

(D) in

36. He is fully contented _____ his life.

(A) in

(B) of

(C) with

(D) to

Space For Rough Work

37. He is not living _____ his means.

(A) for

(B) from

(C) within

(D) in

38. He got well _____ his illness in two weeks.

(A) by

(B) with

(C) on

(D) over

39. Choose the correct sentence.

(A) She is the tallest girl in the class.

(B) She is the most tallest girl in the class.

(C) She is the taller girl in the class.

(D) She is tallest girl in the class.

40. Choose the correct sentence.

(A) Poor are hated everywhere.

(B) The poors are hated everywhere.

(C) The poor are hated everywhere.

(D) The poor is hated everywhere.

41. Choose the correct sentence.

(A) He is as tall as I.

(B) He is as tall as I am.

(C) He is so tall as I.

(D) He is so tall as I am.

42. The cat sprand _____ the table.

(A) over

(B) off

(C) at

(D) from

Space For Rough Work

43. She is _____ for London.

(A) being leaved

(B) leave

(C) leaving

(D) left

44. The price of an item that costs ₹ 80 was raised by 25%. What is the new price ?

(A) 100

(B) 120

(C) 80

(D) 110

45. In the following question, there is some relationship between the two terms to left of :: and the same relationship continuous between two terms to its right.

BH : KQ :: FL : _____

(A) PV

(B) PQ

(C) SV

(D) SQ

46. Find the odd man.

81 : 243, 16 : 64, 64 : 192, 25 : 75

(A) 81 : 243

(B) 16 : 64

(C) 64 : 192

(D) 25 : 75

47. A pineapple costs ₹ 7 each. A watermelon costs ₹ 5 each. X spends ₹ 38 on these fruits. The number of pineapple purchased is

(A) 2

(B) 3

(C) 4

(D) Data inadequate

48. A woman says "If you reverse my age, the figures represent my husband's age. He is, senior to me and the difference between our ages is $\frac{1}{11}$ of their sum." The age of woman is

(A) 23 years

(B) 34 years

(C) 45 years

(D) None of these

Space For Rough Work

49. When two coins are tossed, the possible outcomes are

(A) 2

(B) 4

(C) 1

(D) None

50. Probability lies between

(A) -1 & 1

(B) 0 & 1

(C) 0 & n

(D) 0 & ∞

51. The mean of the set of values 2, 4, 3, 5, 5 and 6 is

(A) 4.5

(B) 4.16

(C) 3.2

(D) 25

52. The range of following observations 2, 3, 5, 9, 8, 7, 6, 5, 7, 4, 3 is

(A) 11

(B) 5

(C) 6

(D) 7

53. If AM of $x_1, x_2, \ldots x_n$ is $\bar{x}$, then AM of $ax_1 + b, ax_2 + b, \ldots ax_n + b$ is

(A) $a\bar{x}$

(B) $a\bar{x} + b$

(C) $a\bar{x} + nb$

(D) None of these

54. The value of $\text{cosec}^{-1}(2)$ is

(A) $\frac{\pi}{6}$

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

(C) $\frac{5\pi}{6}$

(D) 0

Space For Rough Work

55. If $A = \begin{bmatrix} \alpha & 0 \\ 1 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$, the value of α for which $A^2 = B$ is

(A) 1

(B) -1

(C) 4

(D) None of these

56. If $A = \begin{bmatrix} 2x & 0 \\ x & x \end{bmatrix}$, $A^{-1} = \begin{bmatrix} 1 & 0 \\ -1 & 2 \end{bmatrix}$, then the value of x is

(A) 2

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

(C) 1

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

57. If $\log (x + 2) + \log (x - 3) = 0$, then values of x are

(A) $-2, 3$

(B) $2, 3$

(C) $2, -3$

(D) $-2, -3$

58. The sum of $1 + \frac{1}{2} + \frac{1}{2^2} + \ldots\ldots$ is

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

(B) ∞

(C) 2

(D) -2

59. The 3 arithmetic means between 3 and 19 are

(A) 7, 11, 15

(B) 5, 10, 15

(C) 6, 11, 16

(D) 5, 7, 9

60. Equation of the circle with centre $(-3, 2)$ and radius 4 is

(A) $(x + 3)^2 + (y - 2)^2 = 16$

(B) $(x - 3)^2 + (y - 2)^2 = 16$

(C) $(x + 3)^2 + (y + 2)^2 = 25$

(D) $x^2 + y^2 = 25$

Space For Rough Work

PART – 2

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

61. Find the value of λ for which the system of equations

$2x + 3y - 2z = 0$

$2x - y + 3z = 0$

$7x + \lambda y - z = 0$

has non-trivial solution.

(A) $\frac{-57}{10}$

(B) $\frac{57}{10}$

(C) $\frac{-10}{57}$

(D) $\frac{10}{57}$

62. If the circle $x^2 + y^2 - 17x + 26y + c = 0$ passes through (3, 1) (14, –1) and (11, 5), the value of c is

(A) 0

(B) –41

(C) $\frac{-17}{2}$

(D) 41

63. The equation of the parabola having focus (–3, 0) and directrix $x = 3$ is

(A) $y^2 = 12x$

(B) $y^2 = -12x$

(C) $x^2 = 12y$

(D) $x^2 = -12y$

64. Find the value of λ for which $2\hat{i} + 4\hat{j} + \hat{k}$ and $4\hat{i} - 8\hat{j} + \lambda\hat{k}$ are perpendicular.

(A) –15

(B) 10

(C) –40

(D) 20

65. $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$, $B = \begin{bmatrix} x & 1 \\ y & -1 \end{bmatrix}$ and $(A + B)^2 = A^2 + B^2$, then $x + y$ is

(A) 2

(B) 3

(C) 4

(D) 5

66. $(559)_{10} = (\quad)_{16}$

(A) 2215

(B) 22F

(C) 2F2

(D) F22

67. $\log_2 512$ is

(A) 6

(B) 7

(C) 8

(D) 9

68. 5%7 = _____

(A) 5

(B) 7

(C) 2

(D) 0

Space For Rough Work

69. Maximum number of integers that can be represented in 1 byte is _____

(A) 100

(B) 200

(C) 128

(D) 256

70. $(1111)_2 + (1)_2 =$ _____ .

(A) $(1112)_2$

(B) $(10000)_2$

(C) $(11111)_2$

(D) $(00001)_2$

71. In the following alphabet second half is written first and then the first half arranged in reverse order. Then the 5th letter to the left of 16th letter from the right is

ABCDEFGHIJKLMNOPQRSTUVW XYZ.

(A) S

(B) T

(C) P

(D) F

72. In a certain code 'INACTIVE' is written as VITCANIE'. How is 'COMPUTER' written in that code ?

(A) UTEPMOCR

(B) MOCPETUR

(C) ETUPMOCR

(D) PMOCRETU

73. All S's are P's.

All T's are S's.

All R's are both P's and Q's.

Not all P's are S's.

Not all S's are T's.

Which of the following can be inferred from the above statements ?

(A) Some S's are Q's.

(B) All T's are P's.

(C) All P's are Q's.

(D) Some S's are not R's.

74. Prices have risen because production has fallen. Therefore

(A) Production will increase now.

(B) If production falls prices rise.

(C) If production increases prices fall.

(D) Production and prices are inter-related.

75. The positions of the first and fifth digits in the number 83156427 are interchanged. Similarly the positions of the second & sixth digits are interchanged and so on. Which of the following will be the second digit from the right after the rearrangement ?

(A) 2

(B) 6

(C) 4

(D) 1

Space For Rough Work

76. If $\vec{a}$, $\vec{b}$, $\vec{c}$ are unit vectors such that $\vec{a} + \vec{b} + \vec{c} = 0$, then the value of $\vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{c} + \vec{c} \cdot \vec{a}$ is

(A) 1

(B) 3

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

(D) None

77. The value of

$\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{3}\right) + \tan^{-1}\left(\frac{7}{8}\right)$ is

(A) $\tan^{-1}\left(\frac{7}{8}\right)$

(B) $\cot^{-1}(15)$

(C) $\tan^{-1}(15)$

(D) $\tan^{-1}\left(\frac{25}{24}\right)$

78. 3 digit numbers are formed using the digits 0, 2, 4, 6 and 8. A number is chosen at random out of these numbers. What is the probability that the number has the same digits ?

(A) $\frac{1}{16}$

(B) $\frac{16}{25}$

(C) $\frac{1}{645}$

(D) $\frac{1}{25}$

79. The scores of batsman A in 10 different test matches were 38, 70, 48, 34, 42, 55, 63, 46, 54, 44. The mean score is

(A) 50

(B) 48

(C) 200

(D) 70

80. If $\begin{bmatrix} x+y & 2x+z \\ x-y & 2z+w \end{bmatrix} = \begin{bmatrix} 4 & 7 \\ 0 & 10 \end{bmatrix}$, then the values of x, y, z & w are

(A) 2, 2, 3, 4

(B) 2, 3, 1, 2

(C) 3, 3, 0, 1

(D) None of these

Space For Rough Work

Space For Rough Work