POST GRADUATE COMMON ENTRANCE TEST-2016

DATE	COURSE	TIME
02-07-2016	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
					D - 1	243048

DOs :

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.

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 BALL POINT 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. Find out the word which is the antonym of 'Innocence'
   (A) Guilt
   (B) Ignorance
   (C) Simplicity
   (D) Harmlessness

2. Correct the meaning of phrase/idiom out of the four responses given
   "To byte the dust"
   (A) To be defeated in battle
   (B) To learn a lesson
   (C) To be ashamed of
   (D) To work very hard

3. From the given alternatives choose one which best expresses the meaning
   "The rebels held out for about a month"
   (A) Waited
   (B) Retreated
   (C) Bargained
   (D) Resisted

4. Select a word from four alternatives which is closest in meaning to the statement
   "Eighty years old person"
   (A) Six decader
   (B) Heptagenarian
   (C) Sexagenarian
   (D) Octagenarian

5. Replace part of the given sentence, which is in bold with an alternative to improve the sentence.
   The struggle for independence is gaining **movement** everyday
   (A) Motion
   (B) Movement
   (C) Momentum
   (D) No improvement

6. Fill up the blank with a suitable word
   I became alert because I _____ troubled around me.
   (A) Saw
   (B) Transcend
   (C) Comprehended
   (D) Sensed

Space For Rough Work

7. Two non-integer roots of $\left(\frac{3x-1}{2x+3}\right)^4 - 5\left(\frac{3x-1}{2x+3}\right)^2 + 4 = 0$ are

(A) –5/7, –2/5

(B) –2/5, 7/5

(C) 5/7, 7/5

(D) –2/5, 5/5

8. If G be the geometric mean of X and Y, then $\frac{1}{G^2 - x^2} + \frac{1}{G^2 - y^2} =$

(A) G^2

(B) $1/G^2$

(C) $2/G^2$

(D) $3G^2$

9. m arithmetic mean have been inserted between 1 and 31 in such a way the ratio of the 7^{th} and the $(m-1)^{th}$ mean is 5 : 9 the value of m is

(A) 12

(B) 13

(C) 14

(D) 15

10. If a, b, c be in HP then

(A) $a^2 + c^2 \succ b^2$

(B) $a^2 + b^2 \succ 2c^2$

(C) $a^2 + c^2 \succ 2b^2$

(D) $a^2 + b^2 \succ c^2$

11. $\left(\frac{a}{a+x}\right)^{1/2} + \left(\frac{a}{a-x}\right)^{1/2}$ is equal to

(A) $2 + \frac{3x^2}{4a^2} + ...$

(B) $1 + \frac{3x^2}{8a^2} + ...$

(C) $2 + \frac{x}{a} + \frac{3x^2}{4a^2} + ...$

(D) $2 - \frac{x}{a} + \frac{3x^2}{4a^2} + ...$

12. In how many ways a garland can be made from exactly 10 flowers.

(A) 10!

(B) 9!

(C) 2X 9!

(D) 9!/2

Space For Rough Work

13. $2\log_{10}5+\log_{10}8-\frac{1}{2}\log_{10}4=$

(A) 2

(B) 4

(C) $2+2\log_{10}2$

(D) $4-4\log_{10}2$

14. If $a^x=b^y=c^z$ *and* $b^2=ac$, then y =

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

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

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

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

15. If $x=5+2\sqrt{6}$, then $\frac{x-1}{\sqrt{x}}$ is equal to

(A) $\sqrt{2}$

(B) $2\sqrt{2}$

(C) $\sqrt{3}$

(D) $2\sqrt{3}$

16. Two dice are tossed. The probability that the total score is a prime number is

(A) 1/6

(B) 5/12

(C) 1/2

(D) 7/9

17. The numbers 3.2, 5.8, 7.9, and 4.5 have frequencies x, $(x + 2)$, $(x + 4)$, and $(x + 6)$ respectively. If arithmetic mean is 4.876 what will be the value of x.

(A) 4

(B) 5

(C) 6

(D) 7

18. If $\tan^{-1}x+\tan^{-1}y+\tan^{-1}z=\frac{\pi}{2}$, then

(A) $x+y+z=0$

(B) $xy+yz+zx=0$

(C) $xy+yz+zx=1$

(D) $x+y+z=1$

Space For Rough Work

19. The equation of the circle of radius 5 units and touching the circle $x^2 + y^2 - 2x - 4y - 20 = 0$ at (5, 5) is

(A) $x^2 + y^2 + 18x + 16y + 120 = 0$

(B) $x^2 + y^2 - 18x + 16y + 120 = 0$

(C) $x^2 + y^2 - 18x - 16y + 120 = 0$

(D) None of these

20. The algebraic sum of deviations of 20 observations measured from 30 is 2 then the mean of observations is

(A) 28.5

(B) 30.1

(C) 30.5

(D) 29.6

21. When the variables are independent, the two lines of regression are

(A) Parallel

(B) Perpendicular

(C) Coincident

(D) None of these

22. How many different numbers a 6-bit binary word can represent ?

(A) 63

(B) 64

(C) 124

(D) 32

23. Which of the following is the most powerful type of computers ?

(A) Super micro

(B) Super conductor

(C) Micro computer

(D) Super computer

24. Processors of all computers, whether micro-mini or main frame must have

(A) ALU

(B) Primary Storage

(C) Control unit

(D) All of the above

Space For Rough Work

25. Which of the following storage is volatile ?

(A) Semi conductor memory

(B) Floppy Disk

(C) CD-ROM

(D) Core memory

26. Which of the following is divisible by 4 ?

(A) 100101100

(B) 1110001110001

(C) 11110011

(D) 10101010101010

27. Input to your computer in accomplished using the

(A) Screen

(B) Keyboard

(C) Printer

(D) Plotter

28. Flash memory is

(A) Non volatile memory

(B) An expensive memory

(C) A mass storage memory

(D) Use to store frequently used data

29. Which of the following is not an operating system ?

(A) Red hot Linux

(B) Windows XP

(C) Fedora

(D) Netscape

30. Which of the following is not a programming language ?

(A) C

(B) C++

(C) Java

(D) .Net

Space For Rough Work

31. What is ISP stands for ?

(A) Internet Standard Protocol

(B) Integrated Standard Processing

(C) Internet Service Provider

(D) Intranet Service Provider

32. The system software that translate high level language to a machine level language is called

(A) Interpreter

(B) Compiler

(C) Assembler

(D) Translator

33. The operating system manages

(A) Memory

(B) Processor

(C) Disk and I/O devices

(D) All of these

34. A Computer cannot "Boot", if it does not have

(A) Compiler

(B) Loader

(C) Operating System

(D) Assembler

35. Two basic types of operating systems are

(A) Sequential and Direct

(B) Batch and time sharing

(C) Sequential and real time

(D) None of the above

36. Which one is not an operating system ?

(A) OS/2

(B) Unix

(C) MS DOS

(D) Pascal

Space For Rough Work

37. If "DROWSY" is written as "HUSAWC", "BEAUTY" will be written as

(A) FIEYXC

(B) EHDXWC

(C) GJFZYD

(D) KFBVUC

38. Jagan went to another town covering 240 km by car moving at 60 km/hrs, then he covered 400 km by train moving at 100 km/hrs and then rest 200 km by a bus moving at 50 km/hrs. Average speed during whole journey was

(A) 80 km/hrs

(B) 70 km/hrs

(C) 75 km/hrs

(D) 72 km/hrs

39. The area of triangle is equal to the area of a square whose each side is 60 metres. The height of the triangle is 90 metres, the base of the triangle will be

(A) 75 metres

(B) 85 metres

(C) 65 metres

(D) 80 metres

40. The horse is tied at the corner of a rectangular field whose length is 20 metres and the width is 16 metres with a rope whose length is 14 metres . Find the area which the horse can graze

(A) 156 sq. metres

(B) 154 sq. metres

(C) 164 sq. metres

(D) 144 sq. metres

41. A shop keeper buys 144 eggs at ₹ 90 paise each, in the way 20 eggs were broken. He sold the remaining eggs at ₹ 1.20 each. The percentage gain or loss is

(A) 14.8% gain

(B) 12.9% gain

(C) 8.5% loss

(D) 4.8% gain

42. It takes 40 men 8 days to earn ₹ 2000. How many men will earn ₹ 200 in two days ?

(A) 10

(B) 14

(C) 16

(D) 20

Space For Rough Work

43. A pipe of 2 inch diameter fills the water tank in one hour if the diameter of the pipe is 4 inch in what time will the pipe fill the same tank.

(A) 10 minutes

(B) 15 minutes

(C) 16 minutes

(D) 20 minutes

44. By how much percent must a motorist increase his speed in order to reduce by 20%, the time taken to cover a certain distance

(A) 20

(B) 30

(C) 25

(D) 35

45. Choose the correct option in place of question mark :

2	4	6
18	?	30
162	196	150
1458	1372	750

(A) 16

(B) 28

(C) 49

(D) 54

46. Ram showed an old man and said "his son is my son's uncle." How is the old man related to Ram ?

(A) Father

(B) Grandfather

(C) Brother

(D) Uncle

47. ASHA is a part of which of the following schemes launched by the government of India ?

(A) Operation black board

(B) Mid day meal scheme

(C) National old age pension scheme

(D) National rural health mission

48. Which state in India has the highest literacy rate ?

(A) Tamil Nadu

(B) Kerala

(C) Mizoram

(D) Lakshadweep

Space For Rough Work

49. What is the ratio of the width of the Indian flag to its length ?

(A) 1 : 1

(B) 2 : 3

(C) 4 : 2

(D) 2 : 4

50. The song Jana-gana-mana was originally composed in

(A) Bengali

(B) Hindi

(C) Urdu

(D) Sanskrit

51. The National Tree of India is

(A) Neem tree

(B) Lotus tree

(C) Banyan tree

(D) Mango tree

52. The country that shares longest border with India is

(A) China

(B) Bangladesh

(C) Nepal

(D) Pakistan

53. The country which lost the largest number of people in the 2nd World War ?

(A) Germany

(B) Russia

(C) Japan

(D) India

54. What is the full form of SIM ?

(A) Subscriber Identity Module

(B) Subscriber Identity Mode

(C) Subscriber Identity Method

(D) Subscriber Identity Mechanism

Space For Rough Work

55. Which is the longest National Highway in India ?

(A) NH 33

(B) NH 44

(C) NH 13

(D) NH 36

56. What is the full form of https ?

(A) Hypertext Transfer Protocol Safe

(B) Hypertext Transfer Protocol Secure

(C) Hypertext Transfer Protocol Smart

(D) None of the above

57. In the following question, group of four words are given. One word is wrongly spelt. Identify the word.

(A) Complement

(B) Compliment

(C) Supplement

(D) Requirement

58. A sentence has been given in active/passive voice. Out of the four alternatives suggested below, select the one which best expresses the same sentence in passive/active voice

"Let me do this".

(A) Let us do this.

(B) This be done by me.

(C) Let this be done by me.

(D) Let do this.

59. Fill up the blank with the most suitable word

The proud king turned a deaf ear to the _____ of his ministers.

(A) Advises

(B) Advice

(C) Advisor

(D) Advices

60. Find out the word that is the synonym of 'Revolt'

(A) Obey

(B) Loyal

(C) Rebel

(D) Submit

Space For Rough Work

PART – 2

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

61. Which of the following is not an example of Application Software ?

(A) Word Processing

(B) Spreadsheet

(C) DOS

(D) Computer Graphics

62. The three main components of a computer are

(A) Tape, I/O, Floppy Disk

(B) CPU, I/O, Memory

(C) CPU, Memory, Tape

(D) I/O, Printer, Mouse

63. Which of the following coded entries are used to control access to computer ?

(A) Code Word

(B) Passwords

(C) Binary Pass

(D) ASCII Codes

64. Your Computer's ROM is used to contain

(A) Permanent Information

(B) Manufacturer Specific Software

(C) Software that can only be read

(D) All of the above

65. If for $p > 0$, one root of the equation $3x^2 + px + 3 = 0$ is the square root of the other then the value of p is

(A) –3

(B) –1/3

(C) 3

(D) 1/3

66. Find the least integer n such that $7^n > 10^5$, given that $\log_{10}343 = 2.5353$.

(A) 6

(B) 3

(C) 5

(D) None of these

67. If $\begin{vmatrix} b+c & c & b \\ c & c+a & a \\ b & a & a+b \end{vmatrix} = k\ abc$, then the value of k is

(A) 1

(B) 2

(C) 3

(D) 4

Space For Rough Work

68. If ${}^{n}c_{r-1} = 36$, ${}^{n}c_{r} = 84$ and ${}^{n}c_{r+1} = 126$ then r =

(A) 1

(B) 2

(C) 3

(D) None of these

69. The coefficient of x^4 in $\left[\frac{x}{2} - \frac{3}{x^2}\right]^{10}$ is

(A) $\frac{405}{256}$

(B) $\frac{504}{259}$

(C) $\frac{450}{263}$

(D) 1

70. Given $\Sigma x = 16$, $\Sigma y = 6$, $\Sigma xy = -12$, $\Sigma x^2 = 106$, $\Sigma y^2 = 44$, $n = 4$. Then the line of best fit is

(A) $Y = -0.857x + 4.929$

(B) $Y = 0.85x + 4.9$

(C) $Y = 0.8x - 4.92$

(D) $Y = 0.857x - 4.929$

71. A box contains 8 red, 3 white and 9 blue balls. If 3 balls are selected at random without replacement. The probability of getting atleast one white ball is

(A) $\frac{1}{5}$

(B) $\frac{23}{57}$

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

(D) None of these

72. The function $f(x) = \frac{x}{2^4}$, $x = 0, 1, 2, 3, 4$, represents a probability distribution function

(A) True

(B) False

(C) Neither (A) or (B)

(D) None of these

73. In a Poisson distribution $P(X = 3) = P(X = 4)$. The value of $P(X = 1) =$

(A) e^4

(B) 7

(C) $\frac{4}{e^4}$

(D) 3/7

Space For Rough Work

74. One of the equation of a circle of radius 13 units whose centre lies on abscissa and passes through the point (4, 5) is

(A) $x^2 + y^2 - 32x + 37 = 0$

(B) $x^2 + y^2 + 16x + 87 = 0$

(C) $x^2 + y^2 - 32x - 105 = 0$

(D) $x^2 + y^2 + 16x - 105 = 0$

75. The equation of the parabola whose focus is (2, 2) and the directrix is $x + y + 1 = 0$ is $x^2 - 2xy + y^2 - 10x - 10y + \lambda = 0$. The value of λ is

(A) 5

(B) 15

(C) –15

(D) 2

76. Two vector forces $f_1 = 3\hat{i} - 2\hat{j} + \hat{k}$ and $f_2 = \hat{i} + 3\hat{j} - 5\hat{k}$ acting on a particle at A move it to B. The work done, if the position vector of A and B are $-2\hat{i} + 5\hat{k}$ *and* $3\hat{i} - 7\hat{j} + 2\hat{k}$ is

(A) 20 units

(B) 7 units

(C) 25 units

(D) 0 units

77. The value of $\tan\left(\cos^{-1}\left(\frac{4}{5}\right) + \tan^{-1}\left(\frac{2}{3}\right)\right)$ is

(A) $\frac{17}{6}$

(B) $\frac{7}{6}$

(C) $\frac{1}{6}$

(D) None of these

78. In ΔABC, a = 2, b = 4 and $\hat{C} = 60^\circ$ then $\hat{A}$ *and* $\hat{B}$ are equal to

(A) $90^\circ, 30^\circ$ (B) $60^\circ, 60^\circ$

(C) $30^\circ, 90^\circ$ (D) $60^\circ, 45^\circ$

79. The angle between the pair of straight lines $x^2 - 5xy + 4y^2 + 3x - 4 = 0$ is

(A) $\tan^{-1}\left(\frac{3}{4}\right)$

(B) $\tan^{-1}\left(\frac{4}{5}\right)$

(C) $\tan^{-1}\left(\frac{3}{5}\right)$

(D) None of these

80. Which of the following storage devices can be carried around ?

(A) Register

(B) Core Memory

(C) Floppy disk

(D) RAM

Space For Rough Work

Space For Rough Work