POST GRADUATE COMMON ENTRANCE TEST – 2011

DATE	COURSE / SUBJECT	TIME
07-08-2011	**MASTER OF COMPUTER APPLICATIONS**	**02:30 pm to 04:30 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_4	00005792

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 02:25 pm.**
3. The serial number of this question booklet should be entered on the OMR answer sheet.
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 02:30 pm, till then;**
   - Do not remove the seals of this question booklet.
   - Do not look inside this question booklet.
   - Do not start marking 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 02:30 pm, remove the seals 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 marking 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 question / item.
   - Completely **darken / shade** the relevant circle with a **blue or black ink ballpoint pen against the question number on the OMR answer sheet.**
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 at the bottom 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 04:30 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. Hand over 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.
10. Only **Non-programmable** calculators are allowed.

Marks Distribution

PART A : 60 Questions carry one mark each (1 to 60)

PART B : 20 Questions carry two marks each (61 to 80)

SEAL

PART – A

Each question carries *one* mark. 60 × 1 = 60

1. The silicon chips used for data processing are called
   (A) RAM chips (B) ROM chips
   (C) Microprocessor (D) PROM chips.
2. The contents of information are stored in
   (A) Memory data register (B) Memory address register
   (C) Memory access register (D) Memory arithmetic register.
3. A path by which communication is achieved between a central processor and other devices is called
   (A) wires (B) bus
   (C) network (D) channel.
4. A hybrid computer uses a ..... to convert digital signals from a computer into analog signals.
   (A) Modulator (B) Demodulator
   (C) Modem (D) Decoder.
5. The section of the CPU that selects, interprets and sees to the execution of program instruction is
   (A) Memory (B) Register unit
   (C) Control unit (D) ALU.
6. Which of the following memories must be refreshed many times per second ?
   (A) Static RAM (B) Dynamic RAM
   (C) EPROM (D) ROM.
7. Which of the following will happen when data is entered into a memory location ?
   (A) It will add to the content of the location
   (B) It will change the address of the memory location
   (C) It will erase the previous content
   (D) It will not be fruitful if there is already some data at that location.

SPACE FOR ROUGH WORK

8. Which printer is very commonly used for desk-top publishing ?

(A) Laser printer (B) Ink-jet printer

(C) Daisy wheel printer (D) Dot-matrix printer.

9. An optical input device that interprets pencil marks on paper media is

(A) Magnetic tape (B) Punch card reader

(C) Optical scanner (D) OMR.

10. Which is a GUI based Operating System ?

(A) DOS (B) WINDOWS

(C) UNIX (D) All of these.

11. A multi-programming system is one that can

(A) run very fast

(B) share hardware resources with many programs simultaneously

(C) compute many programs simultaneously

(D) use many operating systems.

12. ASCII stands for

(A) American Standard Code for Information Interchange

(B) All-purpose Scientific Code for Information Interchange

(C) American Security Code for Information Interchange

(D) American Scientific Code for Information Interchange.

13. Which of the following is the 1's complement of 10010 ?

(A) 10101 (B) 01101

(C) 01111 (D) 10010.

14. Conversion of binary number 1010 1010 0001 0111 to hexadecimal number is

(A) $A8F9_{16}$ (B) $AB17_{16}$

(C) $AA17_{16}$ (D) $A9F8_{16}$.

15. The equivalent of $62_{(10)}$ in binary is

(A) 111110 (B) 1111110

(C) 11110 (D) 11101.

SPACE FOR ROUGH WORK

16. The result of $1010_{(2)} + 1011_{(2)} =$

(A) 10110 (B) 10101

(C) 11010 (D) 10010.

Direction (Question Nos. 17 to 18 are based on the information given below) :

A, B, C, D, E, F, G and *H* are friends, sitting around a circle facing its centre.

1) *H* is to the immediate left of *A*, but not the neighbour of *E* and *D*.

2) *F* is to the immediate right of *B* and *G* is the neighbour of *E*.

3) *C* is between *E* and *F*.

17. What is the position *D* ?

(A) Between *B* and *C* (B) Between *A* and *F*

(C) Fourth to the right of *G* (D) Between *A* and *B*.

18. Which of the following statements is true ?

(A) *F* is the immediate neighbour of *B* (B) *G* is between *E* and *H*

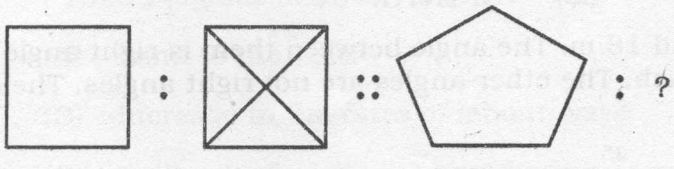
(C) *H* is between *A* and *D* (D) *D* is two places from the right of *C*.

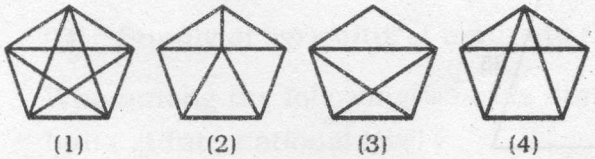
19. In a class of 50 students 23 speak English, 15 speak Hindi and 18 speak Kannada. 3 speak only English and Hindi, 6 speak only Hindi and Kannada and 6 speak only Kannada and Hindi and 9 can speak only English. How many speak all the three languages ?

(A) 3 (B) 4

(C) 5 (D) 7.

20.





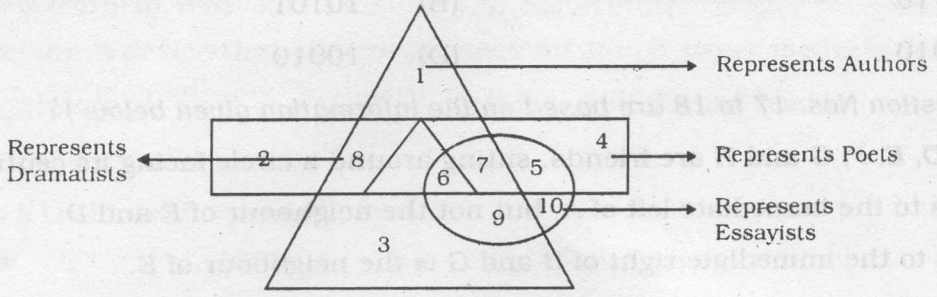
(1) (2) (3) (4)

(A) 4 (B) 3

(C) 2 (D) 1.

SPACE FOR ROUGH WORK

Direction (Question Nos. 21 to 22 are based on the following intersecting figures) : The spaces are numbered from 1 to 10. Study the figure and answer the questions carefully :



21. Which number represents poets who are also essayists but not authors or dramatists ?

(A) 4 (B) 5

(C) 6 (D) 7.

22. Which numbers represent poets who are neither authors nor essayists or dramatists ?

(A) 2 and 4 (B) 2 and 5

(C) 6 and 7 (D) 9 and 10.

23. Six members of a family *M, N, O, P, Q* and *R* are travelling together. *N* is the son of *O*, but *O* is not the mother of *N*. *M* and *O* are married couple. *Q* is the brother *O*. *P* is the daughter of *M*. *R* is the brother of *N*. How many male members are there in the family ?

(A) 4 (B) 3

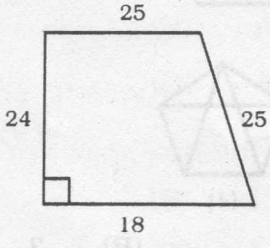
(C) 2 (D) 1

24. In a code language FATHER is written as IFAQPE then in the same code PARENT can be written as

(A) REYMYH (B) SEXNXG

(C) RFXMXH (D) SFYNYG.

25. Two sides of a plot measure 24 m and 18 m. The angle between them is right angle and the other two sides measure 25 m each. The other angles are not right angles. The area of the plot in square metre is



(A) 300 (B) 360

(C) 480 (D) 516.

SPACE FOR ROUGH WORK

Direction (Answer Question Nos. 26 to 27 using the following information) :

An engineer, a lawyer, a musician and a dancer all lived in the same building. The names are *A*, *B*, *C* and *D* not necessarily in that order. *D* and the dancer were not friendly with *C*. *A* and the musician were friends. *C* and the engineer lived in the same floor. The lawyer was friend of *B* and the musician.

26. The profession of *C* is

(A) Dancer (B) Engineer

(C) Lawyer (D) Musician.

27. Among them who is engineer ?

(A) *D* (B) *E*

(C) *B* (D) *A*.

28. Which of the following cities is the headquarters of Nature Conservation Foundation ?

(A) Hyderabad (B) Bharatpur

(C) Mysore (D) Raipur.

29. How many countries are in BRICS Union ?

(A) 4 (B) 5

(C) 6 (D) 7.

30. Which one among the following was the major demand of the Bardoli Satyagraha (1928) organized under the leadership of Sarda Vallabhbhai Patel ?

(A) Land to the Tiller

(B) Increase in the rates of labour wage

(C) Rollback of newly enhanced revenue rate

(D) Supply of agricultural inputs to the farmers at subsidized rate.

31. Who among the following was the first sports person to win a medal in Gymnastics for India at International level ?

(A) Ashish Kumar (B) Akhil Kumar

(C) Sushil Kumar (D) Gagan Narang.

SPACE FOR ROUGH WORK

32. What is the name of the first magazine issued by the Indian Railways in 2010 for distribution among passengers in premier trains, including Rajdhanis and Shatabdis ?

(A) Rail Mitra (B) Rail Bandhu

(C) Sahyatri (D) Humsafar.

33. Which committee was appointed by the Government to recommend rules for the pricing of all natural gases ?

(A) Kaushik Basu Committee (B) C. Rangarajan Committee

(C) Ashok Chawla Committee (D) Deepak Parekh Committee.

34. Who said 'The Muslims were fools to ask for safeguards, and the Hindus were greater fools to refuse them' ?

(A) Subhash Chandra Bose (B) Maulana Muhammed Ali

(C) Sardar Vallabhbhai Patel (D) Abul Kalam Azad.

35. The Indian port(s) from where the Dutch operated their trade was/were

(A) Pulicat (B) Machilipatnam

(C) Negapat (D) All of these.

36. Asiatic Society of Bengal was founded in 1784 by

(A) Sir Robert Chambers (B) Sir William Jones

(C) H. H. Wilson (D) Robert Home.

37. Which country convened the Mini Pravasi Bharatiya Diwas in June 2011 ?

(A) Canada (B) Fiji

(C) South Africa (D) USA.

38. He enjoys ..... health even at this stage.

(A) sound (B) good

(C) pink of (D) fine.

39. The company has agreed in ..... to our suggestion.

(A) general (B) view

(C) principle (D) basis.

SPACE FOR ROUGH WORK

40. Your son had promised to call you to the USA, ... ?

(A) didn't he (B) did he

(C) hadn't he (D) had he.

41. The 'gift of the gab' means

(A) an unexpected gain (B) fluency of speech

(C) thought-provoking oration (D) a gift from Santa Claus.

42. The antonym of 'profane' is

(A) volatile (B) useless

(C) sacred (D) unholy.

43. A synonym for 'rescind' is

(A) to return (B) to revert

(C) to cancel (D) to remind.

44. She is clever ..... cooking.

(A) in (B) at

(C) with (D) on.

45. He was travelling alone ..... a bus.

(A) of (B) in

(C) on (D) by.

46. Identify the mis-spelt word :

(A) camouflage (B) chaos

(C) recommend (D) reballion.

47. Identify the wrong pair :

(A) curtail/enlarge (B) abridge/condense

(C) obscure/abstruse (D) ample/abundant.

SPACE FOR ROUGH WORK

48. Elimination of a racial group by killing is called

(A) homicide (B) regicide

(C) genocide (D) patricide.

49. 'Emeritus' means

(A) suspended from service

(B) resigned from service

(C) honourably discharged from service

(D) relieved from service.

50. Sugar : Molasses : : Gasoline : ..... .

(A) Petroleum (B) Drill

(C) Quarry (D) Mine.

51. The prefix 'poly' expresses

(A) one (B) many

(C) two (D) none.

52. He could not explain ..... why he was late.

(A) due to (B) because

(C) as to (D) though.

53. If $\log_5 a = b - \log_5 c$, then $a =$

(A) $\frac{5^b}{c}$ (B) $-5^b . c$

(C) bc (D) $-bc$.

54. The number of committees of 5 members that can be formed from a group of 8 gentlemen and 5 ladies, including one particular gentleman and excluding one particular lady in the committe, is

(A) ${}^{11}C_5$ (B) ${}^{11}C_4$

(C) ${}^{12}C_5$ (D) ${}^{12}C_4$.

SPACE FOR ROUGH WORK

55. In a class of 49 students, 32 take tea and 26 take coffee. If 20 take both tea and coffee, the number of students who take tea but not coffee and coffee but not tea is

(A) 22 (B) 20

(C) 18 (D) 6.

56. If $a^x = c^y$ and $c^z = a^w$, then which of the following is not true ?

(A) $x : y = w : z$ (B) $w : x = z : y$

(C) $z^2 : y^2 = w^2 : x^2$ (D) $y^2 : w^2 = z^2 : x^2$.

57. The solutions of the equation $\tan x + \cot x = 2$ lie in the

(A) I and II quadrants (B) II and III quadrants

(C) I and III quadrants (D) III and IV quadrants.

58. If the points $(a, 0)$, $(0, b)$ and $(2011, -2011)$ are collinear, then

(A) $\frac{1}{a} + \frac{1}{b} = 2011$ (B) $\frac{1}{a} + \frac{1}{b} = \frac{1}{2011}$

(C) $\frac{1}{a} - \frac{1}{b} = 2011$ (D) $\frac{1}{a} - \frac{1}{b} = \frac{1}{2011}$.

59. The median of the observations, $a+4, a-\frac{7}{2}, a-\frac{5}{2}, a-3, a-2, a+\frac{1}{2}, a-\frac{1}{2}, a+5$ is $\frac{1}{4}$ The value of a is

(A) $\frac{3}{4}$ (B) $\frac{3}{2}$

(C) 1 (D) 3.

60. Which of the following statements is correct ?

(A) If $x^6 + 1$ is divided by $x + 1$, the remainder is 2

(B) If $x^6 + 1$ is divided by $x - 1$, the remainder is -2

(C) If $x^6 + 1$ is divided by $x + 1$, the remainder is 1

(D) If $x^6 + 1$ is divided by $x - 1$, the remainder is -1.

SPACE FOR ROUGH WORK

PART – B

Each question carries *two* marks. $20 \times 2 = 40$

61. Which of the following is *not* a singular matrix ?

(A) $\begin{bmatrix} 0 & a-b & a-c \\ b-a & 0 & b-c \\ c-a & c-b & 0 \end{bmatrix}$ (B) $\begin{bmatrix} a-b & b-c & c-a \\ b-c & c-a & a-b \\ c-a & a-b & b-c \end{bmatrix}$

(C) $\begin{bmatrix} 90 & 60 & 30 \\ 60 & 10 & 50 \\ 30 & 50 & 10 \end{bmatrix}$ (D) $\begin{bmatrix} 38 & 2 & 6 \\ 33 & 3 & 5 \\ 22 & 4 & 3 \end{bmatrix}$.

62. If $\vec{a} = 2i - 3j + k$ and $\vec{b} = i - 2j + k$ are two adjacent sides of a parallelogram, then the lengths of the 2 diagonals are

(A) $\sqrt{38}, \sqrt{2}$ (B) $6, \sqrt{3}$

(C) $\sqrt{10}, \sqrt{2}$ (D) $\sqrt{12}, \sqrt{3}$.

63. The line joining A (2, 0) and B (3, 1) is rotated about A in the anticlockwise direction through 120°. If the new position of B is C, then the length of BC is

(A) $\sqrt{2}$ (B) $\sqrt{6}$.

(C) 2 (D) $\sqrt{3}$.

64. A circle cuts an intercept of 8 units on the x-axis and touches the y-axis at (0, 3). The equation of the circle is

(A) $x^2 + y^2 \pm 10x + 6y + 9 = 0$ (B) $x^2 + y^2 \pm 10x - 6y + 9 = 0$

(C) $x^2 + y^2 + 6x \pm 10y + 9 = 0$ (D) $x^2 + y^2 - 6x \pm 10y + 9 = 0$.

65. If $0 \le x \le 1$ and $m \le \sin^{-1}x + \cos^{-1}x + \tan^{-1}x \le n$ then (m, n) is

(A) $\left(\frac{\pi}{2}, \frac{3\pi}{4}\right)$ (B) $\left(\frac{\pi}{2}, \pi\right)$

(C) $\left(\frac{\pi}{4}, \pi\right)$ (D) $\left(\frac{\pi}{4}, \frac{3\pi}{4}\right)$.

SPACE FOR ROUGH WORK

66. The foot of the perpendicular drawn from (2, 1) to the line $y = x$ is

(A) $\left(\frac{3}{2}, \frac{3}{2}\right)$ (B) $\left(\frac{1}{2}, \frac{1}{2}\right)$

(C) (3, 3) (D) (2, 2).

67. The term 'gigabyte' refer to

(A) 1024 bytes (B) 1024 kilobytes

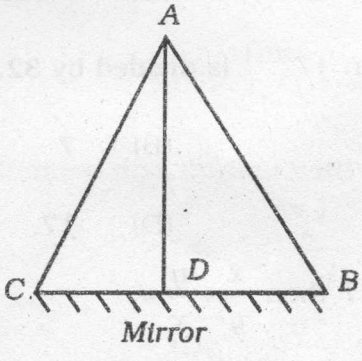
(C) 1024 megabytes (D) 1024 kilobits.

68. The result of $100_{(2)} \times 1001_{(2)} =$

(A) $44_{(8)}$ (B) $24_{(16)}$

(C) $36_{(10)}$ (D) All of these.

69. A given figure *ABCD* has a mirror attached to its baseline *BDC* so that the whole figure is reflected in the mirror as *BDCA*. From this given information state how many triangles can be seen in the whole figure *ABCD* :



(A) 2 (B) 3

(C) 6 (D) 8.

70. A stopwatch show time in seconds and minutes. To show time as one minute, it needs four complete rotations of the seconds needle. If the watch was stopped after 27 rotations of the second needle, then what time does it show ?

(A) 5 min 30 sec (B) 6 min

(C) 6 min 30 sec (D) 6 min 45 sec.

SPACE FOR ROUGH WORK

71. The least value of the expression $4x^2 - 3x + 2$ is

(A) $\frac{23}{16}$ (B) $\frac{-23}{16}$

(C) $\frac{41}{16}$ (D) $\frac{-41}{16}$.

72. In an Arithmetic Progression (A.P.), first term is 2 and the sum to 21 terms is zero. The 16th term of the A.P. is

(A) – 2 (B) – 1

(C) – 3 (D) – 4.

73. Sum to 100 terms of the series $1^2 - 3^2 + 5^2 - 7^2 + 9^2 - 11^2 + \ldots$ is

(A) – 80000 (B) – 40000

(C) – 20000 (D) – 10000.

74. The remainder obtained when 17^{2011} is divided by 32, is

(A) 15 (B) 7

(C) 16 (D) 17.

75. If $x = 5\sqrt{2} + 7$ and $y = 5\sqrt{2} - 7$ then $\frac{x}{y} + \frac{y}{x} =$.

(A) 196 (B) 99

(C) 98 (D) 198.

76. $\sin\left(\frac{\pi}{10}\right) + \sin\left(\frac{3\pi}{10}\right) + \sin\left(\frac{11\pi}{10}\right) + \sin\left(\frac{13\pi}{10}\right) =$

(A) 1 (B) 4

(C) 2 (D) 0.

SPACE FOR ROUGH WORK

77. For the ellipse, $\frac{x^2}{a} + \frac{y^2}{b} = 1$, two directrices are $x = \pm 3$ and two foci are $(\pm 2, 0)$. Then $a : b =$

(A) 9 : 1 (B) 6 : 1

(C) 3 : 1 (D) $\sqrt{3}$: 1.

78. A and B are two events. Odds against A are 2 to 1. Odds in favour of $A \cup B$ are 3 to 1. If $x \le P(B) \le y$ then (x, y) is

(A) $\left(\frac{2}{5}, \frac{2}{3}\right)$ (B) $\left(\frac{1}{5}, \frac{2}{3}\right)$

(C) $\left(\frac{5}{12}, \frac{3}{4}\right)$ (D) $\left(\frac{7}{12}, \frac{1}{4}\right)$.

79. Two persons A and B throw a die alternately till one of them gets a 'two' and wins the game. If A throws first then

(A) $P(A) = \frac{1}{2}$ (B) $P(B) = \frac{1}{2}$

(C) $P(B) > \frac{1}{2}$ (D) $P(A) > \frac{1}{2}$.

80. A random variable x follows binomial distribution with mean 'a' and variance 'b'. Then

(A) $0 < a < b$ (B) $\frac{a^2}{a-b}$ is a positive integer

(C) $a < 0 < b$ (D) $\frac{a^2}{a-b}$ is a negative integer.

SPACE FOR ROUGH WORK