POST GRADUATE COMMON ENTRANCE TEST – 2011

DATE and TIME	COURSE	SUBJECT
06-08-2011 **02:30 pm to 04:30 pm**	**Department of Post Graduate Studies and Research in Mathematics and Computer Science, Kuvempu University and Department of Studies in Computer Science, University of Mysore**	**Mathematics and Computer Science**

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	00000548

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.

SEAL

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. This question booklet contains 75 (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 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 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 I : 50 Questions carry one mark each (1 to 50)
PART II : 25 Questions carry two marks each (51 to 75)

SEAL

PART – I

Each question carries *one* mark. $50 \times 1 = 50$

1. $(u+v)'$

   (A) $uv' + vu'$ (B) $u'v'$

   (C) $uu' + vv'$ (D) $u' + v'$.

2. $y'' + p(x)y' + q(x)y = 0$ is

   (A) non-linear and homogeneous (B) linear and homogeneous

   (C) linear and non-homogeneous (D) non-linear and non-homogeneous.

3. Which of the following statements is true ?

   (A) Initial value differential equation problem is same as boundary value differential equation problem

   (B) Initial value differential equation problem is not same as boundary value differential equation problem

   (C) The classification of initial value or boundary value differential equation does not exist

   (D) All second order differential equations are initial value differential equations.

4. A numerical method to solve first order differential equation is

   (A) Newton-Raphson method (B) Simpson's method

   (C) Runge-Kutta method (D) Bisection method.

5. Consider two circuits — one made up of R (resistor) and L (inductor) components and the other made up of R (resistor) and C (capacitor) components.

   (A) Both give rise to first order differential equations

   (B) Both generate second order differential equations

   (C) R-L gives first order differential equation whereas R-C circuit gives second order differential equation

   (D) R-L circuit gives second order differential equation whereas R-C circuit gives first order differential equation.

SPACE FOR ROUGH WORK

6. $A \cup (B \cap C) =$

(A) $(A \cup B) \cup (A \cup C)$ (B) $(A \cap B) \cap (A \cap C)$

(C) $(A \cup B) \cap (A \cup C)$ (D) $(A \cap B) \cup (A \cap C)$.

7. For mutually exclusive events A and B, $P(A \cup B) =$

(A) $P(A) \cup P(B)$ (B) $P(A) \cap P(B)$

(C) $P(A) + P(B) - P(A \cap B)$ (D) $P(A) + P(B)$.

8. In rolling two fair dice, the probability of obtaining a sum greater than 3 but not exceeding 6 is

(A) $\frac{1}{3}$ (B) $\frac{1}{6}$

(C) $\frac{1}{5}$ (D) $\frac{1}{2}$.

9. If a set of n distinct elements is permuted in all possible ways, total number permutations and total number of possibilities of getting the elements in sorted sequence respectively are

(A) $(n/2)!$ and 1 (B) $n!$ and n

(C) $n!$ and 2 (D) $(n-1)!$ and n.

10. A set of $n \times n$ linear equations can numerically be solved by which of the following iterative methods ?

(A) Gauss triangularisation (B) Gauss-Jordan diagonalisation

(C) L-U factorization (D) Gauss-Siedel transformation.

11. The pair of Boolean expressions $(x'y + xy')$ and (xy) represent collectively

(A) combination of AND or OR gates (B) two inputs and one output

(C) half adder (D) half subtractor.

12. Gigabyte is

(A) 1024 bytes (B) 1024 kilobytes

(C) 1024 megabytes (D) 1024 terabytes.

SPACE FOR ROUGH WORK

13. Storage device used to compensate for the difference in rates of flow of data from device to another is

(A) Cache (B) Concentrator

(C) ROM (D) Buffer.

14. Equation of line joining (0, 2) and (5, 0) is

(A) $2x + 5y = 10$ (B) $5x + 2y = 10$

(C) $5x + 2y = 1$ (D) $2x + 5y = 1$.

15. The corresponding sides of two equiangular triangles are

(A) equal (B) proportional

(C) unequal (D) parallel.

16. Which of the following is true ?

(A) getchar ( ) and putchar ( ) can be replaced by scanf ( ) and printf ( )

(B) getchar ( ) can be replaced by scanf ( ) but not putchar ( ) by printf ( )

(C) getchar ( ) cannot be replaced by scanf ( ) but putchar ( ) can be replaced by printf ( )

(D) getchar ( ) and putchar ( ) cannot be replaced by scanf ( ) and printf ( ).

17. Consider int x = 1234. Consider the following statements :

(i) printf ("%d\n", x)

(ii) printf ("% 3d\n", x)

(iii) printf ("% – 6 d\n", x)

(A) Print-outs appear differently in each of the cases

(B) Print-outs appear same for all cases

(C) Print-outs appear same for (i) and (ii) but not for (iii)

(D) Print-out cannot be possible for (ii).

SPACE FOR ROUGH WORK

18. Consider f = 3456·78. Consider the following printf statements :

(i) printf ("%10·2e\n", f)

(ii) printf ("% – 12·2e\n", f)

(iii) printf ("%e\n", f)

Which one of the following produces the print-out as 3·46e + 03 ?

(A) (i) and (iii) (B) (ii) and (iii)

(C) (i) and (ii) (D) (iii).

19. An arithmetic statement $a + b / c * d$ stands for

(A) sum of a and b is divided by the product of c and d

(B) the quotient of b divided by c is multiplied by d, and the product is added to a

(C) b is divided by the product of c and d, and the quotient is added to a

(D) sum of a and b is divided by c and the quotient is multiplied by d.

20. $a = a - 5$ can also be written as

(A) $a - 5 = a$ (B) $a = + - 5$

(C) $a - = 5$ (D) $5 = a -$

21. When accessing a structure member, the identifier to the left of the dot operator is the name of

(A) a structure member (B) a structure tag

(C) a structure variable (D) the keyword *struct*.

22. The data type of all elements in an array

(A) could be mixed (B) should be same

(C) could both be int and float type (D) could both be float and char type.

23. Multiple lines of text can be read using

(A) the normal cout << combination (B) getchar ( )

(C) printf ( ) (D) cin.get ( ) function.

SPACE FOR ROUGH WORK

24. In the array double Array [7] refers to which of the following elements ?

(A) 6th (B) 7th

(C) 8th (D) Impossible to tell.

25. A pointer is

(A) the address of a variable

(B) an indication of the variable to be accessed next

(C) a variable for storing address

(D) the data type for an address variable.

26. For the differential equation $xy' = 2y$ a solution is

(A) $y = x$ (B) $y = \sin x$

(C) $y = x^2$ (D) $y = x \log x$.

27. The differential equation $y' + y = x^2 - 2$ is of

(A) first degree (B) first order

(C) third degree (D) second order.

28. If $y'' + 2y' + 4y = x^2$ is an initial valued differential equation, the number of initial states to be provided to solve the differential equation is

(A) 2 (B) 1

(C) 3 (D) 0.

29. $x^2 + y^2 + 2gx + 2fy + c = 0$ represents

(A) sphere (B) circle

(C) hyperbola (D) ellipse.

30. $\int e^{ax}\, dx$

(A) $e^{ax} + c$ (B) $ae^{ax} + c$

(C) $\frac{1}{a} e^{ax} + c$ (D) $e^{ax} + a$.

SPACE FOR ROUGH WORK

31. $\alpha\left(e^{at}\right)$ for $t \geq 0$ and for constant value of a is

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

(C) $\frac{1}{a-s}$ (D) $\frac{a}{s}$.

32. Taylor series representation of a continuous function $f(x, y)$ is composed of

(A) terms without derivatives (B) terms with partial derivatives

(C) terms with Laplace transforms (D) terms containing e^{ax} and e^{ay}.

33. Which of the following statements is true with regard to Median and Mean ?

(A) Median requires some computation whereas Mean requires locating in a sorted list for it

(B) If the list is unsorted finding out Median takes more time than finding out mean for a large sized list

(C) Median and Mean would always indicate almost the same value

(D) Median and Mean help to understand the nature of spread in data.

34. If $\overline{x}$ is the mean of set [X] containing n elements and $\overline{y}$ is the mean of set [Y] containing m elements, then the overall mean is

(A) $(\overline{x}+\overline{y})/2$ (B) $(\overline{x}+\overline{y})/(m+n)$

(C) $(n\,\overline{x}+m\,\overline{y})/(m+n)$ (D) $(n\,\overline{x}+m\,\overline{y})/2$.

35. Total number of subsets of $S = \{a, b, c\}$ is

(A) 8 (B) 3

(C) 6 (D) 7.

36. The 9's complement of $(52520)_{10}$ is

(A) 47479 (B) 58589

(C) 47480 (D) 58590.

SPACE FOR ROUGH WORK

37. If 7321 binary coding is adopted, then the ambiguity while coding occurs if decimal digit is

(A) 10 (B) 3

(C) 5 (D) 4.

38. A Boolean expression in sum of product form implies a logic circuit with

(A) many AND gates and one OR gate

(B) many OR gates and one AND gate

(C) many AND gates and many OR gates

(D) all AND gates without any OR gate.

39. The procedure 'Double negate the product of sum form and expand only inner negation' helps to realise a logic circuit using

(A) only NOR gates (B) only AND gates

(C) only NAND gates (D) only OR gates.

40. $\left(AB^{l} + C^{l} D^{l}\right)^{l} =$

(A) $(A^{l} + B)(C + D)$ (B) $(A^{l} + C)(A^{l} + B)(A^{l} + D)$

(C) $(A + B^{l})(C^{l} + D^{l})$ (D) $(A^{l} + B + C + D)$.

41. Mean, Variance and Standard Deviation of a set of n elements

(A) can be computed using spread sheet

(B) cannot be computed using spread sheet

(C) can be computed using C code on spread sheet

(D) can be computed using FORTRAN code on spread sheet.

42. C++

(A) is a subset of C

(B) has all features of C and advanced pointers

(C) has features of C and PASCAL

(D) has all features of C and provides objected oriented constructs.

SPACE FOR ROUGH WORK

43. It is very difficult to debug

(A) compile time errors (B) logical errors

(C) runtime errors (D) linker errors.

44. Mantissa-Exponent form is associated with

(A) Integer constants (B) Character constants

(C) Real constants (D) Boolean/logical constants

45. On a 16 bit machine data types *double* and *long double* respectively are of the ..... sizes in bytes.

(A) 4, 8 (B) 8, 10

(C) 8, 16 (D) 6, 10.

46. If/(Then)/Else in C may be replaced by

(A) Conditional operator/Ternary operator

(B) Size of ( ) operator

(C) Comma operator

(D) Increment/Decrement operator.

47. Consider the following nested loop structure

{ for $i \leftarrow 1$ to n { for $j \leftarrow i$ to n {EXECUTE} } }

Total number of times execution takes place is

(A) n^2 (B) $2n$

(C) $n(n+1)/2$ (D) $n(n-1)/2$.

48. Multiplication of two matrices of order $(M \times N)$ and $(N \times M)$ requires

(A) one loop structure (B) two nested loops

(C) two separated loops (D) three nested loops.

49. The *break* statement results in an exit from

(A) the innermost loop only (B) the innermost switch only

(C) from all loops and switches (D) from the innermost loop or switch.

50. The *goto* causes control to move to a/an

(A) operator (B) variable

(C) label (D) function.

SPACE FOR ROUGH WORK

PART – II

Each question carries *two* marks. 25 × 2 = 50

51. If a set of simultaneous equations are transformed into triangular structure :

$$\begin{bmatrix} a_{11} & 0 & 0 & 0 & \cdot & \cdot & \cdot \\ a_{21} & a_{22} & 0 & 0 & \cdot & \cdot & \cdot \\ a_{31} & a_{32} & a_{33} & 0 & \cdot & \cdot & \cdot \\ a_{41} & a_{42} & a_{43} & a_{44} & \cdot & \cdot & \cdot \\ \cdot & & & & & & \\ \cdot & & & & & & \\ \cdot & & & & & & \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ \cdot \\ \cdot \\ \cdot \end{bmatrix} = \begin{bmatrix} b_1 \\ b_2 \\ b_3 \\ b_4 \\ \cdot \\ \cdot \\ \cdot \end{bmatrix}$$

then x_i can be computed by

(A) $x_i = \dfrac{b_i}{a_{ii}}$

(B) $x_i = \dfrac{b_i + \sum\limits_{j=1,\,(i-1)} a_{ij}\, x_j}{a_{ii}}$

(C) $x_i = \dfrac{b_i - \sum\limits_{j=1,\,(i-1)} a_{ij}\, x_j}{a_{ii}}$

(D) $x_i = b_i - \dfrac{\sum\limits_{j=1,\,(i-1)} a_{ij}\, x_j}{a_{ii}}$.

52. The numbers of bits in the binary representation of decimal 41 and the binary value of least significant bit respectively are

(A) 6 and 1

(B) 5 and 1

(C) 8 and 1

(D) 6 and 0.

53. The reduced Boolean expression for $(A + C + D)\left(A + C + D'\right)\left(A + C' + D\right)\left(A + B'\right)$ is

(A) $AB'C'D'$

(B) $AB'CD'$

(C) $\left(A + B'\right)\left(C' + D'\right)$

(D) $A + B'CD$.

SPACE FOR ROUGH WORK

54. If *ABCD* represents *BCD* input and *WXYZ* represents output in excess 3 code then

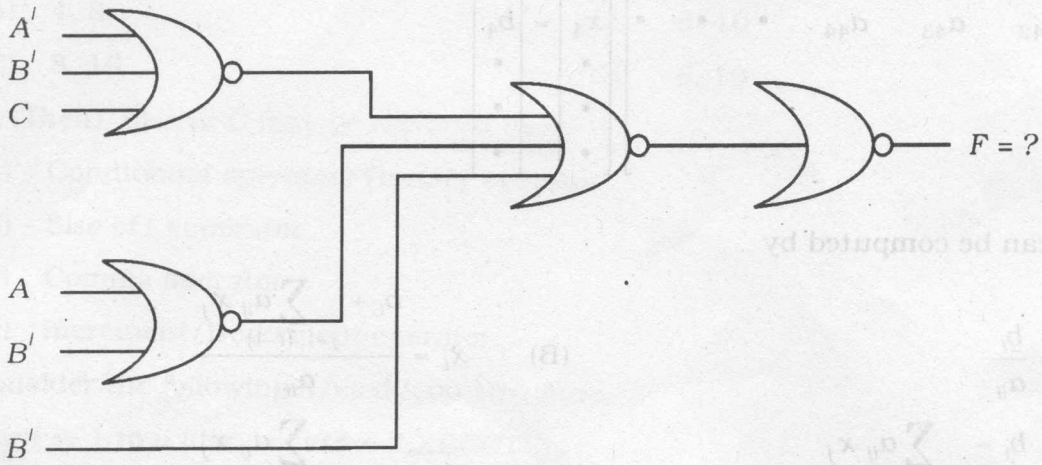
(A) the LSB of output is same as LSB of input

(B) the LSB of output is complement of LSB of input

(C) the second LSB of output can be entirely expressed in terms of the corresponding bit of the input

(D) the MSB of output is same as MSB of input.

55.



(A) $ABC' + A'B + B'$

(B) $\left(ABC' + A'B + B'\right)'$

(C) $(A + B + C)'$

(D) $A'B + AB'$.

56. There are two concentric circles of radii having integer (type int) values 5 and 6 units. In order to compute the increase in the circumference of the outer circle

(A) radii can be operated in 'int' mode and such a program can handle any (generic) values for radii

(B) radii values need not be converted into 'float' mode, because the difference in radii is also integer, and this is true always

(C) radii values could be converted into float mode or could be executed in mixed mode

(D) is simply the value of π.

SPACE FOR ROUGH WORK

57. Remainder (%) operator of *C* employed on 'int' variables can be rewritten in *C* using

(A) other arithmetic operators

(B) other arithmetic operators necessarily with relational opeators

(C) other arithmetic operators with logical operators

(D) relational operators and logical operators.

58. Consider the following code in *C* :

```
#include <iostream>
#include <iomanip>
using namespace std;
int main ( )
    { cout << 1990 << setw (8) << 150 << end l
           << 1991 << setw (8) << 7490 << end l
           << 1992 << setw (8) << 12600 << end l
           << 1993 << setw(8) << 16800 << end l.
    }
```

This generates the output as

(A) 1990 150 1991 7490 1992 12600 1993 16800

(B) 1990 150
1991 7490
1992 12600
1993 16800

(C) 1990 150
1991 7490
1992 12600
1993 16800

(D) 150 1990
7490 1991
12600 1992
16800 1993.

SPACE FOR ROUGH WORK

59. Consider the following arithmetic operations applied to fractions :

$p \leftarrow a/b * c/d$

$q \leftarrow (a * c) / (b * d)$

$r \leftarrow a/b/c/d$

$s \leftarrow (a * d) / (b * c)$

(A) Each of p, q, r, s produces different results

(B) p is same as q but r is not same as s

(C) p is not same as q but r is same as s

(D) p is same as q and r is same as s.

60. Which of the following statements is *not* true with regard to pointers in *C* ?

(A) We can add (or subtract) an integer value to (from) a pointer

(B) Addition of two pointers and subtraction of one pointer from another pointer when they do not point to the same array

(C) We can compare two pointers if they point to the elements of same array

(D) We can assign one pointer to another provided both are of same type.

61. What does the following *C*-pseudocode do ?

```
{ A ← X [1];
    for i ← 1 to n
    { if ( X [ i ] > A ) ( then ) A ← X [ I ] }
}
```

(A) *A* represents average value of [*X*]

(B) *A* represents the last content of [*X*]

(C) *A* represents the largest element in [*X*]

(D) *A* represents the first element in [*X*].

SPACE FOR ROUGH WORK

62.

```
{ for i ← 1 to M
    { B [ i ] ← 0;
        for j ← 1 to N
            { B [ i ] ← B [ i ] + A [ i, j ] }
    }
}
```

This keeps in [B]

(A) sum of every row in [A]

(B) sum of every column in [A]

(C) sum of principal diagonal elements of [A]

(D) sum of all elements of [A].

63. The WHILE/DO loop in C can always be rewritten using

(A) FOR loop in C (B) DO/WHILE loop in C

(C) IF/(THEN)/ELSE and GOTO in C (D) SWITCH in C

64. The control statement to be employed to write a C-program to solve a quadratic equation is

(A) FOR (B) WHILE/DO

(C) SQRT ($B * B - 4 * A * C$) (D) IF/(THEN)/ELSE.

SPACE FOR ROUGH WORK

65. Consider a set $A[1 \ldots n]$ containing elements in an arbitrary sequence. What does $[B]$ contain when the following C-pseudo-code is executed ?

```
{ k ← 1;
    B [k] ← A [1];
    k++;
    for i ← 2 to n
    { if (A [i ] > B [k − 1])
        (then) { B [k] ← A[i]; k++ }
    }
}
```

(A) All elements of A are copied into B

(B) $[B]$ contains monotonically increasing elements drawn from $[A]$ starting with the first element in $[A]$

(C) $[B]$ contains alternate elements of $[A]$

(D) $[B]$ contains the first three largest elements of $[A]$.

66. The solution for $y'' - y = 0$; $y(0) = 4$, $y'(0) = -2$ is

(A) $e^x + 3e^{-x}$ (B) $3e^x + e^{-x}$

(C) $e^x + e^{-x}$ (D) $3e^x + 3e^{-x}$.

67. Consider $y = 100x$ and $z = 2x^2$. Which one is incorrect ?

(A) $y > z$ for $0 < x < 50$ (B) $y < z$ for $50 < x < 100$

(C) $y = z$ for $x = 0$ and $x = 50$ (D) $y' < z'$ for $0 < x < 50$.

SPACE FOR ROUGH WORK

68. $L\frac{di}{dt} + Ri + \frac{1}{C}\int i\,dt = E\sin\omega t$ can be rewritten as

(A) $L\frac{d^2i}{dt^2} + Ri\frac{di}{dt} + \frac{1}{C}i = E\omega\sin\omega t$

(B) $L\frac{d^2i}{dt^2} + Ri + \frac{1}{C}\frac{di}{dt} = E\omega\cos\omega t$

(C) $L\frac{d^2i}{dt^2} + R\frac{di}{dt} + \frac{1}{C}i = E\omega\cos\omega t$

(D) $L\frac{d^2i}{dt^2} + R\frac{di}{dt} + \frac{1}{C}i = E\cos\omega t$.

69. $\alpha(\cos\omega t)$ and $\alpha(\sin\omega t)$ respectively are

(A) $\frac{s}{s^2+\omega^2}$ and $\frac{\omega}{s^2+\omega^2}$

(B) $\frac{s}{s^2-\omega^2}$ and $\frac{\omega}{s^2-\omega^2}$

(C) $\frac{1}{s^2+\omega^2}$ and $\frac{1}{s^2-\omega^2}$

(D) $\frac{s}{s+\omega}$ and $\frac{\omega}{s+\omega}$.

70. Assume a histogram of data in bins. Linear regression through top points of bins corresponding to cumulative histogram will be

(A) parallel to x axis

(B) parallel to y axis

(C) a positive slope line

(D) a negative slope line.

71. Consider the following pseudocode in C :

```
{   for set ← 1 to n
    scanf ( a, b, c );
    if ( ( a > b ) and ( a > c ) ) ( then ) z ← a / b * c;
    printf ( set, z )
}
```

Which statement is true ?

(A) Information printed is always reliable

(B) If the logical condition is *not* satisfied, printf ( ) is not executed

(C) Even if b and c contents appear swapped the printed information is correct irrespective of a

(D) Information printed is *not* always correct.

SPACE FOR ROUGH WORK

72. Consider the following pseudo-code in C :

{ if (($a > b$) and ($b > c$)) (then) { sequence ← (a, b, c) }

This can be rewritten as

(A) if ($a > b$) (then) if ($b > c$) (then) { sequence ← (a, b, c) }

(B) (if ($a > b$) and (if ($b > c$) (then) { sequence ← (c, b, a) }

(C) if ($b \leq c$) (then) if ($a \leq b$) (then) { sequence ← (a, b, c) }

(D) the statement cannot be rewritten avoiding the logical operator *and*.

73. Consider the following pseudo-code in C :

```
{     for i ← 1 to n
      { for j ← 1 to n
            if ( i = j ) ( then ) { d [ k ] ← i + j; k++ }
      }
}
```

d contains

(A) 2, 3, 4 ..... n, $n + 1$, 3, 4, 5 .....

(B) 2, 3, 4 ..... n, ($n + 1$)

(C) 2, 4, 6, 8 ..... $2n$

(D) 1, 2, 3, 4 ..... $2n$.

SPACE FOR ROUGH WORK

74. Assume that $A[1 .. n]$ has elements in ascending order. Consider the following pseudo-code to search if KEY is present in $[A]$ or not :

```
{ for i ← 1 to n
    { if A[i] = KEY ( then ) BREAK (1)
            else if A [i] > KEY ( then ) BREAK (2)
    }
BREAK (3)
}
```

Which is correct ?

(A) It is not at all possible to exit via BREAK (2)

(B) Always the exit is because of BREAK (1)

(C) BREAK (3) happens just because KEY is not present

(D) Even if $A[n] >$ KEY then BREAK (2) occurs.

75. Consider a square matrix $[A]$ of size $n \times n$. To extract the lower triangular elements in $[A]$ which of the following pseudo-codes could be relevant ?

(A) { for $i \leftarrow 1$ to n { for $j \leftarrow 1$ to n { EXTRACT $A[i, j]$ } } }

(B) { for $i \leftarrow 1$ to n { for $j \leftarrow 1$ to i { EXTRACT $A[i, j]$ } } }

(C) { for $i \leftarrow 1$ to n { for $j \leftarrow i$ to n { EXTRACT $A[i, j]$ } } }

(D) { for $i \leftarrow 1$ to $n/2$ { for $j \leftarrow 1$ to $n/2$ { EXTRACT $A[i, j]$ } } }.

SPACE FOR ROUGH WORK