



AD-3257
Third Year B. Sc. (Sem. VI) Examination
March/April - 2014
Mathematics
(E.G. : Computer Oriented Numerical Methods - II)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

<p>नीचे दृशवित्त निशानीवाणी विगतो उत्तरवही पर अवश्य कपची. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination :</p> <p>THIRD YEAR B. Sc. (SEM. 6)</p> <p>Name of the Subject :</p> <p>MATHEMATICS</p> <p>Subject Code No. : <input type="text" value="3"/> <input type="text" value="2"/> <input type="text" value="5"/> <input type="text" value="7"/> Section No. (1, 2,.....) : <input type="text" value="Nil"/></p>	<p>Seat No. :</p> <table border="1" style="width: 100%; height: 20px;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; margin-top: 10px;">Student's Signature</div>						

- (2) Answer all questions.
- (3) First question carries 5 and other question carry 15 marks each.
- (4) Follow usual notations.

- 1 Answer the following : 5
 - (1) Explain the difference between DO Statement and Implier DO statement. 2
 - (2) What is printed by print statement for following : 2
 - (i) DIMENSION A(50)
DO 20 I = 1, 50, 2
PRINT *, A(I)
20 CONTINUE
 - (ii) DIMENSION B(50)
PRINT * (BCD), I = 1, 50, 21
 - (iii) Explain the term :
Statement number

- 2 (a) Explain Logical If statement with illustration. 5
- (b) For given set of numbers, write a program to find total number of positive, total number of negative and total number of zero from this set. 5
- (c) Check the validity of DO statement and justify your answer for following : 5
- (1) DO 25 I = 1, 10
 - (2) DO 30 I = 5.10, -1
 - (3) DO 40 J = 25
 - (4) DO 50 A = 1, 20, 3
 - (5) DO 60 K .EQ. 10, 1, -1

OR

- 2 (a) Explain : Arithmetic IF statement with illustration. 5
- (b) Write a program to pick up the largest of three numbers. 5
- (c) Let $N = 6$, $J = 11$ then what will be final value of N after each of the following program segment : 5
- (i) IF (2*J .LE. 3+N) GOTO 10
 $N = N + 1$
GOTO 20
10 $N = J$
20 $N = N + J$
 - (ii) IF (J .GT. N) GOTO 10
 $N = N + 1$
GOTO 20
10 $N = J$
20 $N = N + 1$

- 3 (a) Explain rules for nested DO loops. 5
- (b) Given 100 integers, write a program to find sum of all even integers and sum of all odd integers and total number of even integers and total number of odd integers. 5
- (c) What is printed by print statement for following : 5
- (i) DO 30 I = 1, 8, 3
DO 30 J = 2, 4
PRINT *, I + J
30 CONTINUE

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(ii) I = 10
      DO 40 J = 5, 1, -1
          I = I + J
      40 CONTINUE
      PRINT *, I

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OR

- 3** (a) Explain DIMENSION statement with illustration. **5**
 (b) Write a program to find sum of digit in a given number. **5**
 (c) Check the validity of subscripted expression for following and justify your answer. **5**
- (i) A (2D)
 (ii) V E L (-1)
 (iii) MATHS (77)
 (iv) B (I, (J))
 (v) BULB (50)

- 4** (a) Explain : F-Format with two illustrations. **5**
 (b) Write a program for Simpson's 1/3 rule for function **5**

$$f(x) = \frac{1}{1+x^2}.$$

- (c) Write a program of multiplication of two matrices. **5**

OR

- 4** (a) Explain : E-FORMAT with two illustrations. **5**
 (b) Write a program to solve the equation $f(x) = x^3 - 5x + 3$ by Bisection method. **5**
 (c) There are 50 students in a class, the marks obtained by each student in exam is given. Write a program to place highest mark at positive one. **5**