



DG-3159
Third Year B. Sc. (Sem. V) Examination
March/April – 2016
Mathematics (E.G.)
(Computer Oriented Numerical Methods - I)

Time : Hours]

[Total Marks :

Instructions :

(1)

<p>नीचे दशांशवेल निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination :</p> <p>Third Year B. Sc. (Sem. V)</p> <p>Name of the Subject :</p> <p>Mathematics (E.G.) (Computer Oriented Numerical Methods - I)</p> <p>Subject Code No. : <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; text-align: center;">3</td><td style="width: 20px; text-align: center;">1</td><td style="width: 20px; text-align: center;">5</td><td style="width: 20px; text-align: center;">9</td></tr></table> Section No. (1, 2,.....): <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; text-align: center;">NIL</td></tr></table></p>	3	1	5	9	NIL	<p>Seat No. :</p> <table border="1" style="width: 100%; height: 30px;"><tr><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td></tr></table> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; margin-top: 10px;">Student's Signature</div>						
3	1	5	9									
NIL												

- (2) All questions are compulsory.
(3) Figures to the right indicate the marks of the question.

Que. 1 Answer any five.

10

- 1 Give reason for the invalidity of the following real/integer constants.
(i) $+ -8567$ (ii) $22*7$ (iii) $3.14E2.5$ (iv) $+966.9E$
- 2 Classify into real/integer variable name.
(i) *BLOOK* (ii) *MASS01* (iii) *THETA* (iv) *LONG*
- 3 Explain the reason for the invalidity of the type declaration
(i) *REAL LIB, MARK.* (ii) *INTEGER PINK BLUE*
- 4 Give reason for the invalidity of the following variable names.
(i) *OUT-PUT* (ii) *REALITY* (iii) *12GIT* (iv) *INT1.2*
- 5 Classify into real/integer constant.
(i) 314 (ii) 82.96 (iii) $85.6E 7$ (iv) 6796
- 6 Translate $D = \sqrt{S(S-A)(S-B)(S-C)}$ into FORTRAN expression.

Que. 2 Answer any **two**. **10**

- 1 Explain the functioning of the *CPU*.
- 2 Define the following terms.
(1) Flow chart (2) Object program (3) Compiler
(4) Algorithm (5) Machine language
- 3 Draw a flow chart to find sum $1^2 + 2^2 + 3^2 + \dots$ upto n terms.

Que. 3 Answer any **two**. **10**

- 1 Identify the errors in the *FORTRAN* translations written on the right side of the arrow for the expressions written on the left side and correct them.

(i) $x^{6a} - y^{\frac{1}{3}}$ \rightarrow `X**(6A)-Y**1/3`

(ii) $\frac{1}{2}mv^2 + mgh$ \rightarrow `1/2M*V*V + m*gh`

- 2 Draw a flow chart to find the largest of three numbers.
- 3 Draw a flow chart to generate all Fibonacci numbers upto 200.

Que. 4 Answer any **two**. **10**

- 1 Write a program to evaluate the value of T given by the following formula:

$$x = \frac{4a^2}{b}; y = a\sqrt{2-L}; T = .0092 * 2a \log_{10}\left(\frac{x}{y}\right) + .004 \{ 2y + .45b \}$$

- 2 What is the final value of A in the following?

$$A = 2.54$$

$$A = (A + 0.25) * 10.$$

$$I = A$$

$$A = I$$

$$A = A/10.$$

If A were 2.56 instead of 2.54 at the beginning what would be its final value?

- 3 Write a program to convert Fahrenheit temperature to centigrade.

Que. 5 Answer any **two**. **10**

- 1 Give *FORTRAN* equivalent for the given expression.

(i) $\frac{\alpha \sin(\omega t + \phi)}{\sqrt{\alpha^2 + \beta^2}}$ (ii) $2.5 \log_{10} x - \cos 32^\circ + \left| x^2 - y^2 \right| + \sqrt{2xy}$

- 2 What is the value of I in the following arithmetic statements?

(i) $I = J * 2/3 + K/4 + 6 - J ** 3/8$ ($J = 2, K = 5$)

(ii) $I = J/2 * 4 + 3/8 + J ** 3$ ($J = 3$)

- 3 Five digits integer is given. Write a program to print it in a reverse order.