BCA 4th Sem.(2015-18)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. If 0.333 is the approximate values of 1/3. Find absolute, relative and percentage error.
2. Find a root of the equation:-
   $x^3 - 4x - 9 = 0$ using Bisection method in four stage.
3. Evaluate $\sqrt{12}$ to four decimal places by Newton's Raphson method.
4. The population of town was given, Estimate the population for the year 1925.

Year (x)	1891	1901	1911	1921	1931
Population (y)	46	66	81	93	101

P.T.O.

5. Compute the values of f(n) for X = 2.5 from the following table :

X :	1	2	3	4
F(X) :	1	8	27	64

using Lagrange's interpolation method.

6. Find F'(1.1) and F''(1.1) from the following tables :

X :	1.0	1.2	1.4	1.6	1.8	2.0
F(X) :	0.0	0.1280	0.5540	1.2960	2.4320	4.000

7. Use Trapezoidal to evaluate:-

$\int_0^1 x^3 dx$ considering find sub-interval

8. Evaluate :

$\int_0^6 \frac{dx}{1+x^2}$ by using Simpson's one-third rules.

9. Solve the equation :

$\frac{dy}{dx} = x + y$ with initial condition y(0) = 1 by Range-Kutta rules from x = 0 to x = 0.4 with h = 0.1.

10. Given $\frac{dy}{dx} = Y - X$, Y(0) = 2. Find Y(0.1) and Y(0.2) correct to four decimal places using both 2nd and 4th order method.

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BCA 4th Sem.(2015-18)

Time : 3 Hrs *Full Marks : 80*

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The questions are of equal value.

Answer any five questions.

1. Explain the Computer Graphics and its application.
2. Describe the basic Architecture of Refresh Cathode Ray Tube.
3. Write down the steps on Bresenham's Circle Drawing Algorithm.
4. Write a programme to draw a line with two end points based on the digital differential analyzer algorithm.
5. What is Transformation? Explain its types.
6. Write down the steps required to fill the polygon using flood fill algorithm and its connected region.
7. What is direct view storage tube. Discuss the function of direct view storage tube.

P.T.O.

8. What is output device? Explain the different types of hard copy output device on details.
9. What is multimedia? Explain the common application of multimedia. Also explain the different file format of common media files.
10. Write short notes on any two of the following :
    (a) Flat Panel Display
    (b) Video Display Device
    (c) Graphics software
    (d) LCD Monitor

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 BC-403

Operating System & Unix

BCA 4th Sem.(2015-18)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. What do you mean by Operating System? What are the main components of Operating System? Explain each components of operating system in details.
2. Define Directory. What are the operations that can be performed on a directory? List the various directory operations and explain each operations in detail.
3. Define file. List the various file attributes and explain each attributes in detail.
4. What is Fragmentation? Explain Internal and External Fragmentation in details and its solution.
5. Explain the architecture of Unix Operating System. What are the different types of files in Unix?
6. Explain the following command with Syntax :
   (i) Who

P.T.O.

(ii) Cut

(iii) mv

(iv) WC

7. What are the basic functions of shell? Explain different types of shells used in UNIX operating system.
8. Explain "grep" command with all options. What are the relationship between Kernel and the shell of UNIX.
9. Write a shell script to find whether the given number is Armstrong number or not.
10. Write short notes on any two of the following : 6

(i) Virtual Memory

(ii) Swapping

(iii) Paging

(iv) Dispatcher

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BC404

Software Engineering Principles

BCA 4th Sem.(2015-18)

Time : 3 Hrs *Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. What is the importance of models in software engineering? Explain with examples of any three process models which are commonly used.
2. Explain with suitable illustration about SPIRAL model. Mention its advantages and disadvantages. Also compare this with the prototyping model.
3. What is DFD? Explain the rules for designing DFD. What are the various tools used for designing it.
4. Write short notes on the followings :
   (a) Quality Assurance
   (b) Configuration Management
   (c) Project Management
   (d) Coupling vs Cohesion
   (e) Benchmark Testing

P.T.O.

5. Explain the various phases of SDLC. Briefly explain the proso-typing model.

6. List the Ten (10) Important Qualities of Software Product and Process.

7. (a) What is Software Testing? Explain different types of testing required for a Software System.

   (b) What is adaptive maintenance? Explain how it is different from corrective maintenance?

8. Explain the following terms in the context of Software Engineering.

   (i) Debugger

   (ii) Reparability

   (iii) Verification

   (iv) User Interface

9. (a) Write at least five differences between Black Box Testing and White Box Testing.

   (b) Write at least five differences between Data Flow Diagrams and E-R Diagrams.

10. (a) What is Risk Management? Explain five Risk Management Techniques.

    (b) How can metrices be helpful in S/W process improvement? Explain.

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