CBCS SCHEME

USN | | | | | | | | | | |

15MAT41

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Engineering Mathematics – IV

Time: 3 hrs. Max. Marks: 80

Note: 1. ***Answer FIVE full questions, choosing ONE full question from each module.***
2. ***Use of statistical table can be provided.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Using Taylor's series method find, y(0.1) given that $\frac{dy}{dx} = x - y^2$, y(0) = 1 by considering upto third degree terms. **(05 Marks)**

b. Apply Runge Kutta method of fourth order to find an approximate value of y when x = 0.5 given that $\frac{dy}{dx} = \frac{1}{x+y}$ with $y(0.4) = 1$. Take h = 0.1. **(05 Marks)**

c. Evaluate y(0.4) by Milne's Predictor-Corrector method given that $\frac{dy}{dx} = \frac{y^2(1+x^2)}{2}$ and y(0) = 1, y(0.1) = 1.06, y(0.2) = 1.12, y(0.3) = 1.21. Apply the corrector formula twice. **(06 Marks)**

OR

2 a. Solve by Euler's modified method $\frac{dy}{dx} = \log_e(x+y)$; y(0) = 2 to find y(0.2) with h = 0.2. Carryout two modifications. **(05 Marks)**

b. Using Runge-Kutta method of fourth order find y(0.2) to four decimal places given that $\frac{dy}{dx} = 3x + \frac{y}{2}$; $y(0) = 1$. Take $h = 0.2$. **(05 Marks)**

c. Given $\frac{dy}{dx} = x^2(1+y)$; y(1) =1, y(1.1) = 1.233, y(1.2) = 1.548, y(1.3) = 1.979. Evaluate y(1.4) to four decimal places using Adam's-Bashforth predictor corrector method. Apply the corrector formula twice. **(06 Marks)**

Module-2

3 a. Given $\frac{d^2y}{dx^2} = y + x\frac{dy}{dx}$ with $y(0) = 1$, $y'(0) = 0$. Evaluate y(0.2) using Runge Kutta method of fourth order. Take h = 0.2. **(05 Marks)**

b. With usual notation prove that $J_{\frac{1}{2}}(x) = \sqrt{\frac{2}{\pi x}}\sin x$. **(05 Marks)**

c. Express $f(x) = 2x^3 - x^2 - 3x + 2$ in terms of Legendre polynomial. **(06 Marks)**

OR

4 a. Apply Milnes predictor corrector method to compute y(0.4) given that $\frac{d^2y}{dx^2} = 6y - 3x\frac{dy}{dx}$ and the following values: **(05 Marks)**

x	0	0.1	0.2	0.3
y	1	1.03995	1.138036	1.29865
y′	0.1	0.6955	1.258	1.873

b. State Rodrigue's formula for Legendre polynomials and obtain the expression for $P_4(x)$ from it. **(05 Marks)**

c. If α and β are the two roots of the equation $J_n(x) = 0$ then prove that $\int_0^1 xJ_n(\alpha x)J_n(\beta x)dx = 0$ if $\alpha \neq \beta$. **(06 Marks)**

Module-3

5 a. Derive Cauchy-Riemann equation in Cartesian form. **(05 Marks)**

b. Evaluate using Cauchy's residue theorem, $\int_C \frac{3z^2 + z + 1}{(z^2 - 1)(z + 3)} dz$ where C is the circle $|z| = 2$. **(05 Marks)**

c. Find the bilinear transformation which maps the points $-1, i, 1$ onto the points $1, i, -1$ respectively. **(06 Marks)**

OR

6 a. Find the analytic function, $f(z) = u + iv$ if $v = r^2 \cos 2\theta - r\cos\theta + 2$. **(05 Marks)**

b. Evaluate $\int_C \frac{e^{2z}}{(z-1)(z-2)} dz$ where C is the circle $|z| = 3$ using Cauchy integral formula. **(05 Marks)**

c. Discuss the transformation $\omega = e^z$. **(06 Marks)**

Module-4

7 a. Find the constant C such that the function,

$$f(x) = \begin{cases} Cx^2 & \text{for } 0 < x < 3 \\ 0 & \text{Otherwise} \end{cases}$$ is a probability density function.

Also compute $P(1<X<2)$, $P(X \leq 1)$, $P(X>1)$. **(05 Marks)**

b. Out of 800 families with five childrens each, how many families would you expect to have (i) 3 boys (ii) 5 girls (iii) either 2 or 3 boys (iv) at most 2 girls, assume equal probabilities for boys and girls. **(05 Marks)**

c. Given the following joint distribution of the random variables X and Y.

X \ Y	1	3	9
2	$\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{12}$
4	$\frac{1}{4}$	$\frac{1}{4}$	0
6	$\frac{1}{8}$	$\frac{1}{24}$	$\frac{1}{12}$

Find (i) E(X) (ii) E(Y) (iii) E(XY) (iv) COV(X, Y) (v) ρ(X,Y) **(06 Marks)**

OR

8 a. Obtain the mean and standard deviation of Poisson distribution. **(05 Marks)**

b. In a test on electric bulbs it was found that the life time of bulbs of a particular brand was distributed normally with an average life of 2000 hours and standard deviation of 60 hours. If a firm purchases 2500 bulbs find the number of bulbs that are likely to last for,
(i) More than 2100 hours (ii) Less than 1950 hours (iii) Between 1900 and 2100 hours.
Given that $\phi(1.67) = 0.4525$, $\phi(0.83) = 0.2967$ **(05 Marks)**

c. A fair coin is tossed thrice. The random variables X and Y are defined as follows:
X = 0 or 1 according as head or tail occurs on the first toss.
Y = number of heads
Determine (i) The distribution of X and Y (ii) Joint distribution of X and Y. **(06 Marks)**

Module-5

9 a. In a city A 20% of a random sample of 900 school boys had a certain slight physical defect. In another city B, 18.5% of a random sample of 1600 school boys had the same defect. Is the difference between the proportions significant. **(05 Marks)**

b. The nine items of a sample have the following values : 45, 47, 50, 52, 48, 47, 49, 53, 51. Does the mean of these differ from the assumed mean 47.5. Apply student's t – distribution at 5% level of significance ($t_{0.05} = 2.31$ for 8 d.f) **(05 Marks)**

c. Find the unique fixed probability vector of the regular stochastic matrix $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ \frac{1}{2} & \frac{1}{2} & 0 \end{bmatrix}$. **(06 Marks)**

OR

10 a. A sample of 100 tyres is taken from a lot. The mean life of tyres is found to be 40,650 kms with a standard deviation of 3260. Can it be considered as a true random sample from a population with mean life of 40,000 kms (use 0.05 level of significance) Establish 99% confidence limits within which the mean life of tyres is expected to lie, (given $Z_{0.05} = 1.96$, $Z_{0.01} = 2.58$) **(05 Marks)**

b. In the experiments of pea breeding the following frequencies of seeds were obtained.

Round and Yellow	Wrinkled and Yellow	Round and Green	Wrinkled and Green	Total
315	101	108	32	556

Theory predicts that the frequencies should be in proportions 9 : 3 : 3 : 1. Examine the correspondence between theory and experiment.
$\left(\chi^2_{0.05} = 7.815 \text{ for } 3 \text{ d.f}\right)$ **(05 Marks)**

c. Three boys A, B, C are throwing ball to each other. A always throws the ball to B and B always throws the ball to C. C is just as likely to throw the ball to B is to A. If C was the first person to throw the ball find the probabilities that after the three throws.
(i) A has the ball (ii) B has the ball (iii) C has the ball. **(06 Marks)**

* * * * *

CBCS SCHEME

USN | 1 | K | S | 1 | 7 | M | E | 4 | 0 | 4 | 15MATDIP41

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Additional Mathematics – II

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Find the rank of the matrix by
$A = \begin{bmatrix} 1 & 2 & 3 & 2 \\ 2 & 3 & 5 & 1 \\ 1 & 3 & 4 & 5 \end{bmatrix}$ by applying elementary row transformations. **(06 Marks)**

b. Find the inverse of the matrix $\begin{bmatrix} 1 & 4 \\ 2 & 3 \end{bmatrix}$ using Caylery-Hamilton theorem. **(05 Marks)**

c. Solve the following system of equations by Gauss elimination method.
$2x + y + 4z = 12$, $4x + 11 - z = 33$, $8x - 3y + 2z = 20$ **(05 Marks)**

OR

2 a. Find the rank of the matrix $\begin{bmatrix} 2 & -1 & -3 & -1 \\ 1 & 2 & 3 & -1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & -1 \end{bmatrix}$ by reducing it to echelon form. **(06 Marks)**

b. Find the eigen values of $A = \begin{bmatrix} 7 & -2 & 0 \\ -2 & 6 & -2 \\ 0 & -2 & 5 \end{bmatrix}$ **(05 Marks)**

c. Solve by Gauss elimination method: $x + y + z = 9$, $x - 2y + 3z = 8$, $2x + y - z = 3$ **(05 Marks)**

Module-2

3 a. Solve $\frac{d^3y}{dx^3} + 6\frac{d^2y}{dx^2} + 11\frac{dy}{dx} + 6y = 0$ **(05 Marks)**

b. Solve $y'' - 4y' + 13y = \cos 2x$ **(05 Marks)**

c. Solve by the method of undetermined coefficients $y'' + 3y' + 2y = 12x^2$ **(06 Marks)**

OR

4 a. Solve $\frac{d^2y}{dx^2} + 5\frac{dy}{dx} + 6y = e^x$ **(05 Marks)**

b. Solve $y'' + 4y' - 12y = e^{2x} - 3\sin 2x$ **(05 Marks)**

c Solve by the method of variation of parameter $\frac{d^2y}{dx^2} + y = \tan x$ **(06 Marks)**

Module-3

5 a. Find the Laplace transform of
i) $e^{-2t}\sin h\,4t$ ii) $e^{-2t}(2\cos 5t - \sin 5t)$ **(06 Marks)**

b. Find the Laplace transform of $f(t) = t^2$ $0 < t < 2$ and $f(t + 2) = f(t)$ for $t > 2$. **(05 Marks)**

c. Express $f(t)=\begin{cases} t & 0<t<4 \\ 5 & t>4 \end{cases}$ interms of unit step function and hence find L[f(t)]. **(05 Marks)**

OR

6 a. Find the Laplace transform of i) t cosat ii) $\frac{\cos at-\cos bt}{t}$ **(06 Marks)**

b. Given $f(t)=\begin{cases} E & 0<t<a/2 \\ -E & a/2<t<a \end{cases}$ where f(t + a) = f(t). Show that $L[f(t)]=\frac{E}{S}\tan h\left(\frac{as}{4}\right)$. **(05 Marks)**

c. Express $f(t)=\begin{cases} 1 & 0<t<1 \\ t & 1<t\le 2 \\ t^2 & t>2 \end{cases}$ interms of unit step function and hence find L[f(t)]. **(05 Marks)**

Module-4

7 a. Find the inverse Laplace transform of i) $\frac{2s-1}{s^2+4s+29}$ ii) $\frac{s+2}{s^2+36}+\frac{4s-1}{s^2+25}$ **(06 Marks)**

b. Find the inverse Laplace transform of $\log\sqrt{\frac{s^2+1}{s^2+4}}$ **(05 Marks)**

c. Solve by using Laplace transforms $y''+4y'+4y=e^{-t}$, given that y(0) = 0, y'(0) = 0. **(05 Marks)**

OR

8 a. Find the inverse Laplace transform of $\frac{1}{(s+1)(s+2)(s+3)}$. **(06 Marks)**

b. Find the inverse Laplace transform of $\cot^{-1}\left(\frac{s+a}{b}\right)$. **(05 Marks)**

c. Using Laplace transforms solve the differential equation $y'''+2y''-y'-2y=0$ given y(0) = y'(0) = 0 and y''(0) = 6. **(05 Marks)**

Module-5

9 a. State and prove Baye's theorem. **(06 Marks)**

b. The machines A, B and C produce respectively 60%, 30%, 10% of the total number of items of a factory. The percentage of defective output of these machines are respectively 2%, 3% and 4%. An item is selected at random and is found defective. Find the probability that the item was produced by machine "C". **(05 Marks)**

c. The probability that a team wins a match is 3/5. If this team play 3 matches in a tournament, what is the probability that i) win all the matches ii) lose all the matches. **(05 Marks)**

OR

10 a. If A and B are any two events of S, which are not mutually exclusive then $P(A\cup B)=P(A)+P(B)-P(A\cap B)$. **(06 Marks)**

b. If A and B are events with $P(A\cup B)=7/8$, $P(A\cap B)=1/4$, $P(\overline{A})=5/8$. Find P(A), P(B) and $P(A\cap\overline{B})$. **(05 Marks)**

c. The probability that a person A solves the problem is 1/3, that of B is 1/2 and that of C is 3/5. If the problem is simultaneously assigned to all of them what is the probability that the problem is solved? **(05 Marks)**

* * * * *

CBCS SCHEME

USN | | | | | | | | | | |

15CS42

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Software Engineering

Time: 3 hrs. Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1	a.	What are the attributes of good software?	(04 Marks)
	b.	With a neat diagram, explain the requirement engineering process.	(08 Marks)
	c.	Explain four professional and ethical responsibilities of a software engineer.	(04 Marks)
		OR	
2	a.	List and explain the métiers used for specifying non-functional requirements.	(05 Marks)
	b.	With a neat block diagram, explain the spiral process model.	(07 Marks)
	c.	Define functional requirements and explain.	(04 Marks)

Module-2

3	a.	With a neat diagram, explain the rational unified process.	(06 Marks)
	b.	Draw a state machine model of a simple microwave oven.	(05 Marks)
	c.	What are the different types of UML diagram? Explain.	(05 Marks)
		OR	
4	a.	What is design pattern? Explain four elements of design pattern.	(06 Marks)
	b.	What is reuse? Explain the types of reuse levels.	(05 Marks)
	c.	Write a short note on open source development.	(05 Marks)

Module-3

5	a.	Define the terms verification and validation.	(02 Marks)
	b.	What is interface testing? Explain the interface components and interface errors.	(08 Marks)
	c.	Explain test-driven development with diagram.	(06 Marks)
		OR	
6	a.	Explain the following : i) Release testing ii) Regression testing iii) Unit testing.	(06 Marks)
	b.	What is software testing? What are the distinct goals of testing process? Write the advantages of software inspection over testing?	(06 Marks)
	c.	Explain the Leman's law.	(04 Marks)

Module-4

7	a.	What are the factors affecting software pricing? Explain.	(06 Marks)
	b.	With a neat diagram, explain cocomo – II model.	(10 Marks)
		OR	
8	a.	Explain the activities involved in re-engineering process, with an illustrative figure.	(08 Marks)
	b.	What are estimation techniques? Explain.	(08 Marks)

Module-5

9	a.	What is program inspection? Write an inspection checklist.	(08 Marks)
	b.	Explain the practices involved in the extreme programming.	(08 Marks)
		OR	
10	a.	State the principles of agile methods.	(06 Marks)
	b.	Write a short note on : i) Pair programming ii) Refactoring.	(10 Marks)

* * * * *

CBCS SCHEME

USN | 1 | K | S | 1 | 6 | C | S | 0 | 8 | 5 |

15CS43

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Design and Analysis of Algorithms

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define algorithm. What are the properties of an algorithm? Explain with an example. **(08 Marks)**

b. Explain asymptotic notations, with examples. **(08 Marks)**

OR

2 a. Explain general plan of mathematical analysis of nonrecursive algorithm with example. **(08 Marks)**

b. Define time and space complexity. Explain important problem types. **(08 Marks)**

Module-2

3 a. Explain divide and conquer technique. Write binary search algorithm. **(08 Marks)**

b. Apply quick sort to sort the list 'QUESTION' in alphabetical order. Draw the tree of recursive calls made. **(08 Marks)**

OR

4 a. What is decrease and conquer approach? Explain the different major variations of decrease and conquer. **(08 Marks)**

b. Design merge sort algorithm and discuss its best-case, average-case and worst-case efficiency. **(08 Marks)**

Module-3

5 a. Explain Geedy criterion. Write a Prim's algorithm to find minimum cost spanning tree. **(08 Marks)**

b. Sort the given list of numbers using heap sort: 2, 9, 7, 6, 5, 8 **(08 Marks)**

OR

6 a. Construct a Huffman tree and resulting code word for the following:

Character	A	B	C	D	-
Probability	0.35	0.1	0.2	0.2	0.15

Encode the words DAD and ADD. **(08 Marks)**

b. Write an algorithm to find single source shortest path. **(08 Marks)**

Module-4

7 a. Define transitive closure. Trace the following graph using Warshall's algorithm. **(08 Marks)**

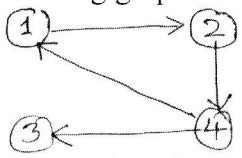

Fig.Q.7(a)

b. What is Dynamic programming? Explain in detail with suitable examples. **(08 Marks)**

OR

8 a. Solve the following instance of knapsack problem using dynamic programming. The capacity of knapsack is W = 5. **(08 Marks)**

Item	Weight	Value
1	2	3
2	3	4
3	4	5
4	5	6

b. Explain multistage graphs with example. Write multistage graph algorithm to forward approach. **(08 Marks)**

Module-5

9 a. Solve subset sum problem for the following example S = {3, 5, 6, 7} and d = 15 construct a state space tree. **(08 Marks)**

b. Explain back tracking concept and how back tracking is used for solving 4-Queen's problem. Show the state space table. **(08 Marks)**

OR

10 a. Explain LC branch and bound and FIFO branch and bound. **(08 Marks)**

b. Obtain the optimal solution for the given assignment problem as a matrix shown below using branch and bound method. **(08 Marks)**

Person	Job1	Job2	Job3	Job4
A	10	2	7	8
B	6	4	3	7
C	5	8	1	8
D	7	6	10	4

* * * * *

CBCS SCHEME

USN | | | | | | | | | | |

15CS44

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Microprocessor and Micro Controller

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. With neat internal block diagram of 8088/86 CPU, explain the working of EU and BIU. **(08 Marks)**

b. What is stack and why is it needed? **(04 Marks)**

c. Assuming that SP = 1236H, AX = 24B6H, DI = 85C2H and DX = 5F93H, with supporting diagram show the contents of the stack as each of the following instruction is executed:
PUSH AX
PUSH DI
PUSH DX **(04 Marks)**

OR

2 a. Assume that the register have the following values and that CS = 1000H, DS = 2000H, SS = 3000H, SI = 4000H, DI = 5000H, BX = 6080H, BP = 7000H, AX = 25FFH, CX = 8791H and DX = 1299H. Calculate the physical address of the memory where the operand is stored and the contents of the memory location in each of the following addressing examples:
i) MOV [SI], AL
ii) MOV [SI + BX + 8], AH
iii) MOV [DI] [BX] + 28, CX
iv) MOV [BP] [SI] + 10, DX
v) MOV [BP] + 200, AX
vi) MOVIDI + BP + 100], AX **(06 Marks)**

b. With neat diagram discus the steps to create a program. **(06 Marks)**

c. Differentiate between EXE and .COM Fite format. **(04 Marks)**

Module-2

3 a. Explain the working of following instruction along with charge in flag bits:
i) ADC ii) SBB iii) DIV iv) DAA v) CMP **(10 Marks)**

b. Write a program that calculates the total sum paid to a salesperson for eight months. The following are monthly paychecks for those months (in Rs): 2300, 4300, 1200, 3700, 1298, 4323, 5673, 986. **(06 Marks)**

OR

4 a. Write a program that:
i) Cleans the screen
ii) Set the curser at row = 8 and column = 14
iii) Displays the string "What is your Name?" **(06 Marks)**

b. With neat diagram illustrate the interrupt vector table. **(06 Marks)**

c. Write short note on the following: i) Type 0 and ii) Type 2 interrupts. **(04 Marks)**

Module-3

5 a. Write a program to find the average of following signed numbers:
+13, -10, +19, +14, -18, -9, +12, -19, +16 **(08 Marks)**

b. Assume that we have 4 bytes of data: 25H, 62H, 3FH and 52H.
i) Find the checksum byte
ii) Perform the checksum operation to ensure data integrity
iii) If the second byte 62H been changed to 22H, show how checksum detects the error. **(08 Marks)**

OR

6 a. Outline the control word format of 8255 PPI with neat diagram. **(06 Marks)**

b. Demonstrate the following with example: i) IN ii) OUT. **(04 Marks)**

c. Find the control word if Port A = out, Port B = in, Port C (lower) = in and Port C (upper) = out. Program the 8255 to get data from Port A and send it to Port B. In addition data from Port C (lower) is sent out to the Port C (upper). Use port addresses of 300H-303H for the 8255 chip. **(06 Marks)**

Module-4

7 a. Distinguish between micro processor and microcontroller. **(05 Marks)**

b. With supporting diagram demonstrate the RISC design philosophy. **(05 Marks)**

c. Explain the memory remapping of embedded system software for initialization (Boot) code. **(06 Marks)**

OR

8 a. Explain with neat diagram, ARM core dataflow model. **(08 Marks)**

b. With neat diagram illustrate the seven processor modes. **(08 Marks)**

Module-5

9 a. Demonstrate the working of barrel shifter with help of example. **(06 Marks)**

b. Illustrate the following instruction with an example:
i) RSB ii) SUB iii) EOR iv) CMN v) TST. **(10 Marks)**

OR

10 a. Write ARM assembly language program for data transfer, arithmetic and logical operation. **(08 Marks)**

b. Demonstrate the following load-store instructions:
i) LDR r0, [r1, #4]!
ii) LDR r0, [r1, #4]
iii) LDR r0, [r1], #4 **(08 Marks)**

* * * * *

CBCS SCHEME

USN | | | | | | | | | | |

15CS45

Fourth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Object Oriented Concepts

Time: 3 hrs. Max. Marks: 80

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Define Structure. With suitable example. **(05 Marks)**

b. State and compare Object – Oriented program using with procedure oriented programming. **(04 Marks)**

c. Define Inline function. Explain with an example program. What are the conditions where inline functions cannot be expanded? **(07 Marks)**

OR

2 a. Differentiate between class and structure. With an example, explain the syntax for defining a class and structure. **(08 Marks)**

b. Define friend junction and rules to be used while using it. Explain with a C++ program to add two complex numbers. **(08 Marks)**

Module-2

3 a. List and explain the Java buzzwords. **(08 Marks)**

b. Differentiate the usage of access specifies in java and their scope. **(04 Marks)**

c. Explain type conversion, with an example. **(04 Marks)**

OR

4 a. Explain the concepts of arrays in Java with examples. Also write a program that creates and initializes a four integer elements array. Find the sum and average of its values. **(08 Marks)**

b. Explain the syntax of for – each loop. Write a Java program to search a key element by using for – each loop. **(08 Marks)**

Module-3

5 a. Can you overload constructor and destructor? Justify with suitable program. **(06 Marks)**

b. Briefly explain the role of interfaces while implementing multiple inheritances in Java. **(06 Marks)**

c. Write a Syntax of try and catch block to handle multiple exceptions. Explain. **(04 Marks)**

OR

6 a. What is Super? Explain the use of super with suitable example. **(06 Marks)**

b. Distinguish between method overloading and overriding in Java with suitable example for overriding method. **(06 Marks)**

c. Define Package. What are the steps involved in creating user defined package with an example. **(04 Marks)**

Module-4

7 a. Describe the thread priority. How to assign and get the thread priority? **(06 Marks)**

b. What is Synchronization? Explain the role of synchronization with producer consumer problem. **(10 Marks)**

OR

8 a. With the syntax explain the use of is Alive ( ) and join ( ) methods. **(06 Marks)**

b. Discuss delegation event model with components based on its model. **(06 Marks)**

c. Explain any two event listener interface with its functions or methods. **(04 Marks)**

Module-5

9 a. Define an Applet. What are the two types of an applet? Explain architecture. **(08 Marks)**

b. What is Swing? Explain important feature of swing. **(04 Marks)**

c. What are advantages and disadvantages of applets? **(04 Marks)**

OR

10 a. Explain the following with an example for each :
i) Jtext field ii) Jtable iii) JcomboBox. **(12 Marks)**

b. Explain components and containers in the swing. **(04 Marks)**

* * * *