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**R18**

Course Code: C30166



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: **BUSINESS ETHICS & CORPORATE GOVERNANCE**

(Common for EEE, ECE, CSE, IT, CSC, CSM, CSD, AID & AIM)

Date: 07.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Can business ethics be taught and trained? 2 M
2. Write in short about moral development. 2 M
3. Ethics in HRM. 2 M
4. Ethics of health care services. 2 M
5. Cyber space. 2 M
6. Ethical dimensions of cyber crimes. 2 M
7. Does good governance really matters to corporations? 2 M
8. Write in short about Board committees. 2 M
9. Corporate risk. 2 M
10. Effective corporate governance frame work. 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Discuss the five myths about business ethics. 10M
- OR**
11. B). Explain the kohlberg's study and carol Gilligan's theory. 10M
12. A). Explain the ethics of finance and accounting professionals. 10M
- OR**
12. B). Elaborate the concept of ethics of media marketing and ethical dilemma. 10M
13. A). Discuss the social, political issues in the cyber space. 10M
- OR**
13. B). Discuss mindset and skills of hackers and other criminals. 10M
14. A). Explain the corporate governance in India-board structures. 10M
- OR**
14. B). Explain the process and evaluation of corporate governance. 10M
15. A). Discuss role of corporate governance in managing the risks. 10M
- OR**
15. B). Explain the internal auditing's role in corporate governance. 10M

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R18

Course Code: A30378



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: WASTE TO ENERGY

(Common for EEE, ECE, CSE, CSD & AID)

Date: 07.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Explain different types of MSW. 2 M
2. Define incinerator. 2 M
3. Define Syngas. 2 M
4. Explain about process of pyrolysis. 2 M
5. Classify various types of gasifiers. 2 M
6. Explain about Updraft gasifiers. 2 M
7. Explain about Biomass Stove. 2 M
8. Briefly discuss various types of Combustors. 2 M
9. List out applications of biogas plants. 2 M
10. Explain briefly about Bio-Chemical Conversion. 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Discuss briefly about Agro based waste. 10M
- OR**
11. B). Explain various types of digestors for waste management briefly. 10M
12. A). Explain the manufacturing process of pyrolytic oils briefly. 10M
- OR**
12. B). Discuss Slow and Fast Pyrolysis methods. 10M
13. A). Draw Gasifier engine arrangement for production of Electric power and explain the methodology. 10M
- OR**
13. B). Explain the design, construction and operation of fluidized bed gasifier. 10M
14. A). Explain Design, Construction and Operation of Fixed bed combustor. 10M
- OR**
14. B). Explain the Design, Construction and Operation of Fluidized bed combustor with neat sketches. 10M
15. A). Discuss briefly about Biomass conversion processes. 10M
- OR**
15. B). Explain the operation of Inclined grate combustors. 10M

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**R18**

Course Code: A30557



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: WEB PROGRAMMING

(Common for EEE, ME, ECE, CSD & AID)

Date: 07.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. How to preserve white space in XHTML? 2 M
2. What is use of tag? 2 M
3. What are <div> and <span> tags? 2 M
4. What is an internal CSS? 2 M
5. Define instance of operator in Javascript. 2 M
6. What is the use of <noscript> tag? 2 M
7. What is XSLT? 2 M
8. Write the differences between XML and HTML. 2 M
9. What is Ajax? 2 M
10. Explain alert(), confirm() and prompt() methods of window object. 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). What is a form? Explain form components with example. 10M
- OR
11. B). Differentiate XHTML and HTML. 10M
12. A). Explain the basic table tags with the different attributes. 10M
- OR
12. B). What are Design issues of CSS? Explain in detail. 10M
13. A). Explain various datatypes used in Javascript. 10M
- OR
13. B). i) Explain about Javascript operators. 5M  
ii) Write a Javascript to find factorial of a given number. 5M
14. A). What do you mean by XML namespace? Explain in detail. 10M
- OR
14. B). What is DTD? Explain internal DTD and external DTD. 10M
15. A). Explain about Ajax features. 10M
- OR
15. B). Explain about the Dojo Toolkit and XMLHttpRequest object. 10M

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R18

Course Code: A30538



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: DEEP LEARNING

(Common for ECE, CSC & CSD)

Date: 07.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Explain briefly about Deep feedforward networks. 2 M
2. Explain briefly about forward propagation. 2 M
3. Summarize  $L^2$  Parameter Regularization. 2 M
4. Demonstrate Dropout method. 2 M
5. Illustrate Empirical Risk Minimization. 2 M
6. Explain about Limited Memory BFGS. 2 M
7. Show the convolution operation. 2 M
8. Explain about the Gabor functions. 2 M
9. Outline the Large-Scale Deep Learning Applications. 2 M
10. Explain about Natural Language Processing (NLP). 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Choose the type of hidden unit to use in the hidden layers of the model. 10M
- OR**
11. B). Make use of Back-Propagation and train a MLP. 10M
12. A). Apply the early stopping meta-algorithm to determine at what objective value we start to overfit, then continue training until that value is reached. 10M
- OR**
12. B). Explain about  $L^1$  Regularization. 10M
13. A). Identify the challenges in Neural Network Optimization. 10M
- OR**
13. B). Choose Newton's Method for optimization of deep models. 10M
14. A). Show that Convolution and Pooling as an Infinitely Strong Prior. 10M
- OR**
14. B). Summarize the Convolution Operation. 10M
15. A). Identify the applications of Deep Learning in Computer Vision. 10M
- OR**
15. B). Identify the applications of Deep Learning in NLP. 10M

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**R18**

Course Code: A30473



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

**Course Name: IMAGE PROCESSING**

**(Common for CSE, IT, CSC, CSM, CSD, AID & AIM)**

**Date: 07.08.2023 AN**

**Time: 3 hours**

**Max.Marks: 70**

(Note: Assume suitable data if necessary)

**PART-A**

**Answer all TEN questions (Compulsory)**

**Each question carries TWO marks.**

**10x2=20M**

1. What is meant by sampling and quantization in an image? 2 M
2. Find the 2D-DCT of the matrix  $f(m, n) = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ . 2 M
3. What do you mean by point processing? 2 M
4. Define spatial filtering. 2 M
5. Draw the block diagram of degradation model and write the equation for it. 2 M
6. What is meant by point spreading function in image degradation? 2 M
7. Why Laplacian of gaussian edge detector is preferred than other edge detectors? 2 M
8. What is a hit-or-miss transform? 2 M
9. What is the need for image compression? 2 M
10. Mention the classification of image compression methods. 2 M

**PART-B**

**Answer the following. Each question carries TEN Marks.**

**5x10=50M**

- 11.A). Explain various neighbors, adjacency and distance measure between the pixels. 10M
- OR**
11. B). i) Mention the different properties of 2D-DFT.Explain any two of them. 6M  
ii) Compute the Hadamard Transform matrix for N=4. 4M
12. A). Justify the statement "Median filter is an effective tool to minimize salt-and -pepper noise" with suitable example 10M
- OR**
12. B). i) Discuss about ideal high pass and Butter worth HPF. 6M  
ii) What is meant by image sharpening? Mention its types. 4M
13. A). Explain inverse filter used in image restoration. Mention its drawbacks. 10M
- OR**
13. B). Explain the iterative method of image restoration. Mention its advantages. 10M
14. A). i) Explain about thresholding technique in image segmentation. 5M  
ii) Explain how regions are growing in region-based segmentation. 5M
- OR**
14. B). i) Write the algorithms for Dilation and Erosion operations in image morphology. 5M  
ii) Mention the properties of opening and closing operations in image morphology. 5M

**(P.T.O..)**

15. A). A source emits four symbols {a, b, c, d} with the probabilities {0.4,0.2,0.1,0.3}. Construct arithmetic coding and decode the word 'DAD'. 10M

**OR**

15. B). Explain lossy predictive coding with suitable example. 10M

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R18

Course Code: A30007



## CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: NUMERICAL TECHNIQUES & PROBABILITY DISTRIBUTIONS

(Common for CE, ME, CSE, IT, CSC & CSD)

Date: 09.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

### PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Find an iterative formula for  $\frac{1}{N}$ ,  $N > 0$  using Newton-Raphson method. 2 M
2. What is Lagrange's interpolation formula? 2 M
3. What is the order and error of Trapezoidal rule? 2 M
4. Find  $y(0.4)$  if  $\frac{dy}{dx} = x^2 - 2xy$ ,  $y(0) = 2$  with the assumption  $h = 0.25$  using Euler's method. 2 M
5. Find the Laplace transform of  $t \cosh at$ . 2 M
6. Find the inverse Laplace transform of  $\frac{1}{s(s^2+a^2)}$ . 2 M
7. If  $X$  is a discrete RV having the following probability distribution 2 M

$x$	1	2	3
$p(x)$	$k$	$k$	$k^2$

Find the value of  $k$ .
8. Find  $P(X = 2)$  if  $X$  is binomially distributed with mean 5 and standard deviation 2 2 M
9. What is meant by contingency table? 2 M
10. List any two uses of chi-square test. 2 M

### PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Determine the positive root of  $x^3 - 4x - 9 = 0$  by bisection method. 10M

OR

11. B). Use Newton's formula to estimate the polynomial  $f(x)$  satisfying the following data, and hence find the value of  $f(4)$  10M

$x$	0	1	2	3
$f(x)$	1	2	1	10

12. A). Divide the range in to 6 equal parts, to find  $\int_0^6 \frac{dx}{1+x^2}$  using Trapezoidal and Simpson's rule. Compare with the actual integration. 10M

OR

12. B). Examine the value of  $y(0.1)$ ,  $y(0.2)$  if  $\frac{dy}{dx} = x - y^2$ ,  $y(0) = 1$  using Fourth order Runge-Kutta method (assume  $h = 0.1$ ). 10M

(P.T.O..)

13. A). Identify the Laplace transform of the "square wave" function  $f(t)$  is defined by 10M  
$$f(t) = \begin{cases} k & \text{if } 0 \leq t \leq a \\ -k & \text{if } a < t \leq 2a \end{cases} \text{ and } f(t + 2a) = f(t) \text{ for all } t.$$

OR

13. B). Solve  $y'' + 4y' + 3y = e^{-t}$  given  $y(0) = 1 = y'(0)$ , using Laplace transform. 10M

14. A). A random variable gives measurements  $X$  between 0 and 1 with probability density function  $f(x) = 12x^3 - 21x^2 + 10x$ ,  $0 \leq x \leq 1$ . Find the following: 10M

(i)  $P\left[X \leq \frac{1}{2}\right]$  and  $P\left[X > \frac{1}{2}\right]$

(ii) the value of  $k$  such that  $P[X \leq k] = \frac{1}{2}$ .

OR

14. B). Messages arrive at a switchboard in a Poisson manner at an average rate of six per hour. Find the probability for each of the following events: 10M

- i). Exactly two messages arrive within one hour
- ii). No message arrives within one hour
- iii). At least three messages arrive within one hour.

15. A). Test the significance of the difference between the means of the samples, drawn from two normal populations with same S.D. from the following data. 10M

	Size	Mean	S.D.
Sample-1	100	61	4
Sample-2	200	63	6

OR

15. B). The theory predicts that the proportion of beans in the four groups A, B, C and D should be 9 : 3 : 3 : 1. In an experiment among 1600 beans, the numbers in the four groups were 882, 313, 287 and 118. Do the experimental results support the theory? 10M

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**R18**

Course Code: A30513



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**

(UGC AUTONOMOUS)

B.Tech IV Semester Regular & Supplementary Examinations August-2023

Course Name: **COMPUTER ORGANIZATION & ARCHITECTURE**

(CSD)

Date: 11.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Explain about Register Transfer Notation. 2 M
2. Define big-endian and little-endian assignments. 2 M
3. Explain about the three types of Integer representation in Fixed – point representation with examples. 2 M
4. What is positional number system? 2 M
5. Difference between privileged and non-privileged instructions. 2 M
6. Explain about Interrupt driven Approach. 2 M
7. How Data Dependencies handled in software? 2 M
8. Define throughput and speedup. 2 M
9. List out replacement algorithms. 2 M
10. Explain about Write policies. 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Explain about Instruction set architecture. 10M
- OR**
11. B). Explain CISC and RISC instruction set with example. 10M
12. A). Explain about floating – point arithmetic operations. 10M
- OR**
12. B). Given, multiplicand A= +22 and multiplier B = -11. Perform the multiplication of A and B using Booth's algorithm. 10M
13. A). Explain about DMA with neat diagram. 10M
- OR**
13. B). Explain about hardwired and microprogrammed design approaches. 10M
14. A). Explain the principle of pipelining with the help of space time diagram. Derive an expression for speed up. 10M
- OR**
14. B). What is cache coherence problem in microprocessor system? How can it be solved? Explain in detail. 10M

(P.T.O..)

15. A). Calculate the number of page hits and faults using FIFO, LRU and OPTIMAL page Replacement algorithms for the following page frame Sequence :5,6,6,3,8,5,7,8,6,5,8,5. (FRAME SIZE = 3) 10M

**OR**

15. B). What is Cache memory? Analyze the three mapping functions of cache memory. 10M

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H.T No:

**R18**

Course Code: A36702



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular Examinations August-2023

Course Name: **BIG DATA PROCESSING**

(CSD)

Date: 14.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. List out the best practices of Big Data Analytics. 2 M
2. Write down the characteristics of Big Data Applications. 2 M
3. How do you analyze the data in Hadoop? 2 M
4. What is HDFS? 2 M
5. How are Big Data and Hadoop related to each other? 2 M
6. What is Reducer phase? 2 M
7. Which types of databases used in NoSQL? 2 M
8. Compare Row oriented and Column Oriented database structures. 2 M
9. Differentiate between HBase Vs. RDBMS. 2 M
10. Difference between HBase and Cassandra. 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). What is Bigdata? Describe the main features of a big data in detail. 10M
- OR**
11. B). Illustrate the various phases involved in Big Data Analytics with neat diagram. 10M
12. A). Draw the architecture of HDFS and explain its components. 10M
- OR**
12. B). List and explain the important features of Hadoop. 10M
13. A). Discuss the Hadoop system and ecosystem components in four layers. 10M
- OR**
13. B). Explain Concept of Map Reduce using an example. Write Map Reduce pseudo code for "Group By" "Aggregation" in a database. 10M
14. A). i) How will you query the data in HIVE? 5M  
ii) Explain the HiveQL-Select-Order By with suitable example. 5M
- OR**
14. B). Explain the process of installing HIVE & features of HIVE. 10M
15. A). Give a detail note on HBASE. 10M
- OR**
15. B). Illustrate the CQL commands and their functionality. 10M

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R18

Course Code: A30228



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular/Supplementary Examinations August-2023

Course Name: **BASIC ELECTRICAL ENGINEERING**

(Common for CSE, IT, CSC, CSD & AID)

Date: 16.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

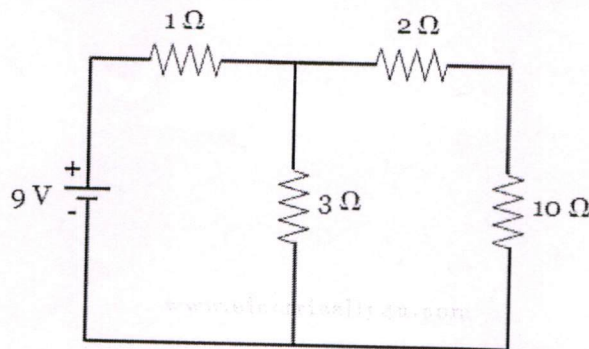
1. Define KVL. 2 M
2. Two resistors of 5 and 10 ohms are connected in parallel. Find the equivalent resistance. 2 M
3. The phase difference between voltage and current in a pure capacitor is \_\_\_\_\_. 2 M
4. Define peak factor. 2 M
5. Name the different types of DC motors. 2 M
6. What is the DC generator principle? 2 M
7. Define transformation ratio. 2 M
8. What is the purpose of using breather in transformer? 2 M
9. Draw the torque slip characteristics of 3-phase induction motor. 2 M
10. A 4 pole 50 Hz induction motor is running at 1400 rpm. What is the synchronous speed and slip? 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

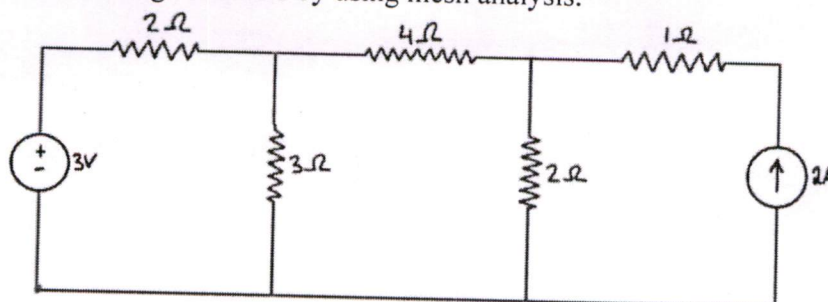
5x10=50M

- 11.A). Solve the given circuit to find the current through 10 Ω using Thevenin's Theorem. 10M



OR

11. B). Find the current through resistors by using mesh analysis. 10M



(P.T.O..)

12. A). Derive the relation between phase and line quantities in case of three phase delta connected system. 10M

**OR**

12. B). Derive the RMS and average value of alternating quantity. 10M

13. A). Explain the construction of DC machine. 10M

**OR**

13. B). Derive the EMF equation of DC generator. 10M

14. A). A 400 kVA transformer has a primary winding resistance of 0.5 ohm and a secondary winding resistance of 0.001 ohm. The iron loss is 2.5 Kw and the primary and secondary voltages are 5 kV and 320 V respectively. If the power factor of the load is 0.85, determine the efficiency of the transformer (i) on full load and (ii) on half load. 10M

**OR**

14. B). Explain the operation and principle of single phase transformer. 10M

15. A). Explain the construction of three phase induction motor. 10M

**OR**

15. B). Explain capacitor start and run induction motor and shaded pole induction motor. 10M

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**R18**

Course Code: A36201



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

B.Tech IV Semester Regular & Supplementary Examinations August-2023

Course Name: **OBJECT ORIENTED PROGRAMMING THROUGH JAVA**  
(CSD)

Date: 18.08.2023 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. What are the differences between class and object? 2 M
2. Write down any two differences between overloading and overriding. 2 M
3. Write any two different cases where java finally block can be used. 2 M
4. Compare between inner class and static inner class. 2 M
5. Classify the different states of a thread. 2 M
6. What is the purpose of Text I/O and Binary I/O ? 2 M
7. In JDBC Components analyze the purpose of DriverManager class and Statement interface. 2 M
8. Differentiate between array and ArrayList. 2 M
9. What is the purpose of adapter class? 2 M
10. What is the relationship between Event sources and Listeners? 2 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Java does not support multiple inheritance. Justify. Explain how will you achieve multiple inheritance in java with suitable example? 10M

**OR**

11. B). Build a package Measure; in which store a class named Convertor that contains methods to convert mm to cm, cm to m and m to km. Define a class Need\_Convertor that imports the Convertor class, now store Need\_Convertor outside the package Measure. Perform path settings accordingly. 10M

12. A). What is an inner class? Explain any two types of inner class with an example. 10M

**OR**

12. B). Explain about the keywords try, catch, throw and throws. Build a java program to read two numbers Num1 and Num2. The division of Num1 and Num2 is displayed in a Result variable. If Num1 or Num2 were not an integer, the program would throw a NumberFormatException. If Num2 is Zero, the program would throw an ArithmeticException. Display the exception message. 10M

13. A). How do you create a thread? Mention the two methods. Write a simple program to create multiple threads. 10M

**OR**

13. B). Explain about any five Byte Stream classes and five Character Stream classes. 10M

(P.T.O.)

14. A). Explain how to utilize Iterator and Calendar.in developing java programs. 10M

**OR**

14. B). Develop a java program that connects to a data base using JDBC and does add, delete, modify and retrieve operations. 10M

15. A). Draw the hierarchy of swing components. Explain about: 10M  
i) JButton  
ii) JLabel  
iii) Jtextfield

**OR**

15. B). Develop a swing application to demonstrate event handling (Mouse events). 10M

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