H.T No: | | | | | | | | | | | **R18** **Course Code: A30514**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: COMPUTER NETWORKS

(Common for CSE, IT & CSM)

Date: 09.05.2023 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. State network hardware. 2 M
2. What is Internet? 2 M
3. Explain simplex data link protocol. 2 M
4. Define sliding window protocol. 2 M
5. Compare virtual circuit and datagram networks. 2 M
6. Give the advantages of routing algorithms. 2 M
7. List the importance of port address in transport layer. 2 M
8. Draw the header format of UDP. 2 M
9. Mention the advantages of User Agent in E-mail. 2 M
10. What is JPEG standard? 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Explain OSI reference model. 10M

OR

11. B). Discuss wireless transmission medium. 10M

12. A). Explain error detection and correction of data link layer. 10M

OR

12. B). Explain ALOHA and Carriers Sense Multiple Access (CSMA) protocols. 10M

13. A). Explain shortest path algorithm with suitable sketches. 10M

OR

13. B). Describe congestion control algorithms. 10M

14. A). Discuss the services of transport layer and sketch the TCP header format. 10M

OR

14. B). Explain TCP connection management in transport layer. 10M

15. A). Explain the concept of Domain Name System (DNS) in application layer. 10M

OR

15. B). Describe the concept of streaming audio and video. 10M

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: A30525**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: SOFTWARE ENGINEERING

(CSM)

Date: 11.05.2023 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. Identify the merits of incremental model? 2 M
2. What is an agile process? Explain. 2 M
3. Illustrate the significance of feasibility study. 2 M
4. Interpret the need of system requirements. 2 M
5. List the principles of a software design. 2 M
6. List the guidelines for data design. 2 M
7. Discuss the process to compute the cyclomatic complexity. 2 M
8. Formulate the metrics used for software maintenance. 2 M
9. Elaborate the need of SCM Repository. 2 M
10. Discuss the reactive risk strategy. 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Summarize software development life cycle. Discuss various activities during SDLC. 10M

OR

11. B). Outline the spiral model with its merits and demerits. 10M

12. A). Show an overview of various system models. 10M

OR

12. B). i) Discuss about principal requirements engineering activities and their relationships. 5M
ii) How a software requirements document is structured? 5M

13. A). i) Construct Architectural Design Styles & Patterns. 5M
ii) Compile the UseCase Diagrams with an example. 5M

OR

13. B). i) Build Sequence Diagram with an example. 5M
ii) Determine Component Diagram with an example. 5M

14. A). What is black box testing? What is boundary value Analysis? Explain the technique specifying rules and its usage with the help of an example. 10M

OR

14. B). Analyse clearly about metrics for software quality. 10M

(P.T.O..)

15. A). i) Explain the factors that affect software quality. 5M

ii) List the major risks in a software project. What are the major ways to abate the risk of cost and schedule overruns? 5M

OR

15. B). Summarize about risk projection and risk management. 10M

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: A36603**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: ARTIFICIAL INTELLIGENCE & APPLICATIONS

(CSM)

Date: 13.05.2023 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 current trends in Artificial Intelligence? 2 M
2. Outline alpha beta pruning in min max algorithm. 2 M
3. Identify any two types of Knowledge. 2 M
4. How do you represent simple facts in predicate logic? 2 M
5. Determine equation for prior probability and posterior probability. 2 M
6. Analyze importance of partial order planning. 2 M
7. What is transformational analogy? 2 M
8. Build a Rote learning. 2 M
9. Identify tasks in dividing language processing problem. 2 M
10. Write the difficulties in developing expert systems. 2 M

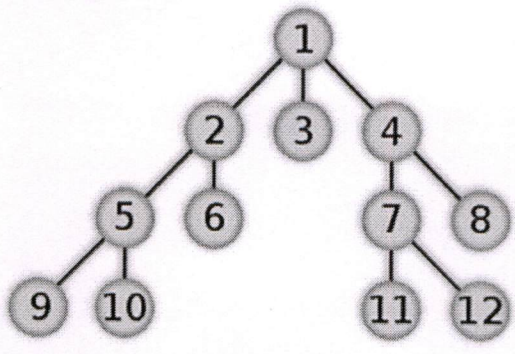
PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Explain the steps involved in AO* algorithm. 10M

OR

11. B). Utilize the Uninformed Search Algorithms on the figure below: 10M



12. A). Discuss the grammar, semantics of Propositional Logic. 10M

OR

12. B). Explain semantic nets and frames techniques with example. 10M

13. A). Elaborate representation of planning in detail. 10M

OR

13. B). Discuss Bayesian reasoning in detail. 10M

(P.T.O..)

14. A). Compare learning by induction and identification trees. 10M

OR

14. B). Demonstrate symbol based learning. 10M

15. A). Explain information retrieval techniques in detail. 10M

OR

15. B). Discuss the Phases involved in building expert systems. 10M

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: A36605**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: THEORY OF COMPUTATION

(CSM)

Date: 16.05.2023 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. Describe the following language over the input set A={a, b} L= $\{a^n b^n | n \geq 1\}$. 2 M
2. Define state, transition and state-transition diagram with a suitable example. 2 M
3. Design a regular expression for the language containing even number of 0's followed by odd number of 1's. 2 M
4. Define NFA and Regular language. 2 M
5. When is PDA said to be deterministic? 2 M
6. Examine the string "aaabbabbba" for the Grammar G with 2 M
   S → aB|bA
   A → a|aS|bAA
   B → b|bS|aBB
7. Show that L={a^p | p is prime} is not context free. 2 M
8. Define GNF. 2 M
9. Describe an example of an undecidable problem. 2 M
10. Compare and contrast recursive and recursively enumerable languages. 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). i) Explain if L is accepted by an NFA with e-transition then how that L is accepted by an NFA without e-transition? 5M

ii) Construct a DFA equivalent to the NFA. M=((p,q,r,s},{0,1 },ñ,p,s}) Where ñ is defined in the following table. 5M

	0	l
p	{q,s}	{q}
q	{r}	{q,r}
r	{s}	{p}
s		{P}

OR

11. B). i) Construct the DFA to recognize odd number of 1's and even number 0's. 5M

ii) Construct the DFA over {a,b} which produces not more than 3 a's. 5M

(P.T.O..)

12. A). Verify the whether L ={ a^{2n} | n>=1} regular Justify your answer. 10M

OR

12. B). Point out about the regular exression and regular Language. 10M

13. A). Solve the following grammar S → aAa | bBb | BB 10M
A→C
B→S |A
C → S | ε for the string abaaba. Give
i) Left most derivation
ii) Right most derivation
iii) Derivation Tree
iv) For the string abaabbba, find the right most derivation.

OR

13. B). Construct a PDA empty store, L= {a^m b^n|n<m}. 10M

14. A). Express the following grammar G into Greibach Normal Form 10M
S → XA|BB
B → b|SB
X → b
A → a

OR

14. B). Construct a Turing Machine to accept palindromes in an alphabet set ∑={a,b}.Trace the strings "abab" and"baab". 10M

15. A). Summarize in detail about multi head and multi tape TM with an example. 10M

OR

15. B). Discuss post correspondence problem. Let ∑={0,1}.Let A and B be the lists of three strings each ,defined as 10M

	List A	List B
i	wi	xi
1	1	111
2	10111	10
3	10	0

i) Does the PCP have a solution?
ii) Prove that the universal language is recursively enumerable.

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: A36613**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
B.Tech V Semester Supplementary Examinations May-2023
Course Name: ADVANCED PYTHON PROGRAMMING
(CSM)

Date: 18.05.2023 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. Build a program that prints numbers from 0 to 57, using range function. 2 M
2. Show the syntax to create, open and close a file. 2 M
3. Demonstrate pandas and numpy module with examples. 2 M
4. Illustrate the series in Pandas. 2 M
5. Compare Numpy vs. SciPy. 2 M
6. Identify key plots that are used for data visualization. 2 M
7. Summarize the advantages of using SQLite. 2 M
8. Define Flask and its applications. 2 M
9. What is Web Scraping? 2 M
10. Summarize Beautiful Soup. 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). What are the different loop control statements available in Python? Explain with suitable examples. 10M

OR

11. B). Develop a python program to write the content "cmr college of engineering & technology" to the existing file. 10M

12. A). Define NumPy Array. With an Example, Create a Matrix using Numpy Matrix Method. 10M

OR

12. B). Explain how will you create an empty DataFrame in Pandas? How will you add a column to a pandas DataFrame. 10M

13. A). List and explain NLP Library. 10M

OR

13. B). Illustrate and explain with examples of plotting Graph. 10M

14. A). Explain with example how to use web forms in flask application. 10M

OR

14. B). List and explain with example what flask templates are. 10M

15. A). Explain the installation of PyQT. 10M

OR

15. B). Illustrate how to scrap websites with Python and Beautiful Soup. 10M

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: A36606**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: COMPUTER VISION

(CSM)

Date: 20.05.2023 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 basic components of image processing. 2 M
2. Image acquisition and image transmission are two important processes. These two processes are the two principle sources of noise. Describe noise effect of image acquisition by imaging sensors. 2 M
3. Why there are so many Color models like RGB, CMY and HSV etc? 2 M
4. Give a general procedure to implement filtering in frequency domain. 2 M
5. What do you mean by zero crossing in edge detection? 2 M
6. Define Contrast Stretching. 2 M
7. What is stochastic search? 2 M
8. Define skeletonization. 2 M
9. Differentiate face detection and face recognition. 2 M
10. List different applications of attention models. 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Explain various geometric transformations. 10M

OR

11. B). Give various Definitions of Computer Vision. 10M

12. A). What is image enhancement? Differentiate spatial domain and frequency domain methods. If I is input intensity and O is output intensity then write the equation for image negation and log transformation. Let the intensity range for the image is [0, L-1]. 10M

OR

12. B). Apply contrast stretching technique on 3 bit gray level image of size 4 x 4. 10M

2	1	2	1
4	5	5	6
3	2	1	4
6	2	1	6

13. A). Discuss the Opening and closing morphology operations and its uses in Image Processing. 10M

OR

13. B). Explain Hit-or-Mass transformation technique. 10M

(P.T.O..)

14. A). Discuss about accurate center location by using Hough transform. 10M

OR

14. B). Briefly explain Hough transform technique to detect circle shape. Assume an equation for circle by (x-a)2 + (y-b)2 = R2 ; where (a, b) is the centre of the circle and R is known radius. 10M

15. A). Explain the basic principle of stereo vision. Also explain the geometry of the system with two cameras (epipolar geometry in stereopsis). 10M

OR

15. B). Explain how attention model is used for human-machine interaction. 10M

*****

H.T No: | | | | | | | | | | | **R18** **Course Code: C30166**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Supplementary Examinations May-2023

Course Name: BUSINESS ETHICS & CORPORATE GOVERNANCE

(Common for ECE, CSE, CSC & CSM)

Date: 22.05.2023 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 Business Ethics and Corporate governance. 2 M
2. What is Ethical Dilemma? Discuss. 2 M
3. Explain the Moral Development. 2 M
4. List the five myths about business ethics. 2 M
5. Outline the Ethics of Hospital Services. 2 M
6. Brief about software challenges. 2 M
7. Define the Hacking. Discuss. 2 M
8. Discuss the following: a) Auditors, b) Directors. 2 M
9. What is Internal Control? Illustrate. 2 M
10. Role of Banking in Corporate Governance? Any five. 2 M

PART-B

Answer the following. Each question carries TEN Marks. **5x10=50M**

11.A). Discuss various principles of ethics and their implications in the present day business world. 10M

OR

11. B). Write in detail about modern ethical models for decision making. 10M

12. A). Explain the ethics to be followed in workplace. 10M

OR

12. B). Explain ethical issues in HRM. 10M

13. A). Briefly state and explain the code of ethics adopted by the business firms in combating frauds. 10M

OR

13. B). Critically Examine the Mindset of Hackers and cyber Criminals. 10M

14. A). Elucidate the structures and processes of corporate governance. 10M

OR

14. B). What is Indian model of corporate governance? Explain it comprehensively. 10M

15. A). What are the recommendations of JJ Irani Committee? Discuss. 10M

OR

15. B). Does the political lobbying affect corporate governance? Elaborate with examples. 10M

*****