

# AR18

**CODE: 18CET101**

**SET-1**

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)**

**I B.Tech II Semester Supplementary Examinations, February-2022**

**BUILDING MATERIALS**

**(Civil Engineering)**

**Time: 3 Hours**

**Max Marks: 60**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

## **UNIT-I**

1. a) Define quarrying and compare between mine and quarry. Also explain about quarrying of stones by wedging with neat sketches. 6M  
b) Explain briefly about mechanical properties of building materials. 6M
- (OR)**
2. a) What is meant by dressing of stone ? Describe its various varieties. 6M  
b) Explain about the qualities of good building stone. 6M

## **UNIT-II**

3. a) Explain the qualities of good timber. 6M  
b) List the tests to which bricks are generally subjected. Also explain briefly any two tests. 6M
- (OR)**
4. a) List the factors affecting the quality of bricks. 6M  
b) Explain the classification of lime. 6M

## **UNIT-III**

5. a) Describe the tests to be conducted for determination of consistency of cement and initial setting time of cement. 6M  
b) Briefly explain the classification of ceramic materials. 6M
- (OR)**
6. a) Define cement concrete and list the stages of production of concrete. 6M  
b) Discuss the various tests to be conducted on mortar. 6M

## **UNIT-IV**

7. a) List the operations involved in the heat treatment of steel and mention the purpose of heat treatment. 6M  
b) Compare between cast iron and steel. Also compare different types of steel. 6M
- (OR)**
8. a) List the general properties of glass. 6M  
b) Discuss the various methods which are adopted to prevent the corrosion of ferrous metals. 6M

## **UNIT-V**

9. a) State the characteristics of distempers. 6M  
b) Explain about defects in painting. 6M
- (OR)**
10. a) List the characteristics of ideal paint. 6M  
b) Explain the properties of glass fibre reinforced plastic. 6M

# AR18

**CODE: 18HST101**

**SET-2**

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)**

**I B.Tech II Semester Supplementary Examinations, February-2022**

**ENGLISH**

**(Common to EEE, ME, ECE Branches)**

**Time: 3 Hours**

**Max Marks: 60**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

## **UNIT-I**

1. a) Analyse the character of Swami in R.K.Narayan's '*Father's Help*'. 6M  
b) Write Synonyms for the following words. 6M  
i) Specific ii) Awful iii) abstract iv) Conflict v) delicate vi) fantastic
- (OR)**
2. a) Imagine yourself in the shoes of Swamy in '*Father's Help*' and present your experience as a school going kid. 6M  
b) Write meanings for the following idiomatic expressions. 6M  
i) To cost an arm and a leg  
ii) Once in a blue moon  
iii) Crocodile tears  
iv) Fish out of water  
v) Piece of cake  
vi) Wild goose chase

## **UNIT-II**

3. a) Who was the source of inspiration to Kalam during his childhood days? Trace out how they could mould his character. 6M  
b) Rewrite the following sentences as directed. 6M  
i) I could not finish the project on time. ( Rewrite using 'able to')  
ii) He said, "I have been studying a lot." ( change it into indirect speech)  
iii) You should follow all the instructions carefully. (Change it into passive voice)  
iv) No other town in Malaysia is as old as Malacca. ( Start the sentence with Malacca).  
v) A bouquet of roses lend colour and fragrance to the room. (Correct the sentence)  
vi) That was a pleasant experience. (Start the sentence with 'What a..')
- (OR)**
4. a) What were the problems faced by Kalam in his childhood? How did he overcome them? 6M  
b) Correct the following sentences. 6M  
i) I request you to kindly help her.  
ii) She goes to college by walk.  
iii) He is writing an exam.  
iv) The book is too interesting.  
v) Do not exceed more than 40Kms/hr.  
vi) I shall take the class.

### UNIT-III

5. a) Draft a summary of George Orwell's essay, *Politics and the English Language* 6M  
b) Correct the following sentences in connection with subject-verb agreement / noun-pronoun agreement / misplaced modifiers / articles / prepositions/ redundancies. 6M
- i) You are supposed to write on the paper.
  - ii) I discovered at my astonishment.
  - iii) Chennai as well as Mumbai are big cities.
  - iv) Either the officer or his subordinates has submitted their resignation.
  - v) The bus station was located by a river which was made of red brick.
  - vi) The two groups are merged together.

(OR)

6. a) How did Orwell explain the power of language in the essay, *Politics and the English Language*. 6M  
b) Fill in the blanks with a. an, the. 6M
- i) She is..Asian by birth, not ....European.
  - ii) Cooperation has ...capacity to shape groups into a Community.
  - iii) Delhi is ....clean place to live in.
  - iv) Man landed on ...moon in ....year 1969.
  - v) ...open air theatre has been built at our college.

### UNIT-IV

7. a) How does Tagore's *Sacrifice* present the contest between religious and secular power?. 6M  
b) Write a letter to the Superintendent of Police requesting him to conduct an awareness programme on 'Drug Abuse' 6M

(OR)

8. a) What did you absorb from the play, *Sacrifice*? Present your ideas in not less than 100 words. 6M  
b) Write an email to the representative of an online bookstore requesting him to send a catalogue on Personality Development related books. 6M

### UNIT-V

9. a) Present the central theme of the poem, *Stopping by woods on a snowy evening*. 6M  
b) Draft an essay on the topic, 'Effects of social media on youth.' 6M
- (OR)
10. a) What do 'woods' signify in the poem, *Stopping by woods on a snowy evening*. Elaborate. 6M  
b) Write a précis of the following passage to one-third of its length and give a suitable title. 6M

Machines have, in fact, become the salves of modern life. They do more and more work that human beings do not want to do themselves. Think for a moment of the extent to which machines do work for you. You wake, perhaps, to the hoot of a siren by a machine in a neighbouring factory. You wash in water brought to you by the aid of machinery, heated by machinery and placed in basins for your convenience by a machine. You eat your breakfast quickly cooked for you by machinery, go to school in machines made for saving leg labour. And if you are lucky to be in a very modern school, you enjoy cinema where a machine teaches you or you listen to lessons broadcast by one of the most wonderful machines. So dependent has man become on machines that a certain writer imagines a time when machines will have acquired a will of their own and become the master of men, doomed once more to slavery.

# AR18

**CODE: 18CST101**

**SET-2**

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI  
(AUTONOMOUS)**

**I B.Tech II Semester Supplementary Examinations, February-2022**

**DATA STRUCTURES AND ALGORITHMS  
(Common to CSE & IT Branches)**

**Time: 3 Hours**

**Max Marks: 60**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the Question must be answered at one place

## **UNIT-I**

1. a) State and explain about different Asymptotic Notations. **6 M**  
b) Define Time & Space Complexities. How is Space Complexity determined for a given algorithm. **6 M**

**(OR)**

2. a) What is data structure? List out the areas in which data structures are applied extensively ? **6 M**  
b) Define the following:  
i) Entity ii) Time Complexity iii) Abstract Data Type **6 M**

## **UNIT-II**

3. a) Suppose An array contains N elements: Compare the running time of the linear search algorithm with the running time of the Binary Search algorithm for the cases when  $N = 1000$  and  $N = 10,000$ . **6 M**  
b) There are 10 water bottles in a tray, out of 10 bottles; one bottle is getting leaked from the bottom. Now you have to find out which bottle is getting leaked. Provide the solution for the problem statement by linear search algorithm. **6 M**

**(OR)**

4. a) In a statistics among 15 students of their weight (e.g. 62Kg, 57Kg, ...) in physical department at an University is collected. Write a program for sorting the weights in descending order and print the second biggest weight by bubble sort. **6 M**  
b) Define hashing. What are the properties of a good hash function? With necessary examples explain four different hashing techniques. **6 M**

## **UNIT-III**

5. a) Write an algorithm for evaluating a postfix expression and evaluate the following postfix expression using the algorithm  $AB + CD / AD - EA \wedge + *$  where  $A=2, B=7, C=9, D=3, E=5$  **6 M**  
b) Explain about various types of queues and their applications. **6 M**
6. a) Explain recursion as an application of stack with examples. **6 M**  
b) Implement functions for Enqueue and Dequeue operations in Queue data structure. **6 M**

#### **UNIT-IV**

7. a) Develop a C program to perform the following: Define the structure of a double linked list node.  
i. Implement the function create() to create a double linked list with 5 nodes. **6 M**  
ii. Implement the function count() to count the number of nodes in the double linked list. Illustrate the above operations with neat diagram.  
b) Explain Linked list as an ADT. Write a function for insertion of a node at beginning in Doubly linked list. **6 M**

**(OR)**

8. a) Define a Circular Linked List. Write a function for insertion of a node at the end in a Circular Linked List. **6 M**  
b) Implement Queue operations Enqueue and Dequeue using Single Linked List. **6 M**

#### **UNIT-V**

9. a) Write an algorithm to delete a node from a Binary Search Tree. **6 M**  
b) What is an AVL tree ? Construct AVL tree for the following data. Mention the type of rotation for each case. 50, 25, 10, 5, 7, 3, 30, 20, 8, 15. **6 M**

**(OR)**

10. a) Discuss about Threaded Binary Tree in detail. **6 M**  
b) Give any two representations of graph. Give algorithm for DFS. Demonstrate DFS using suitable example. **6 M**