AR18

CODE: 18CET418 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

ESTIMATION COSTING AND QUANTITY SURVEYING

(Civil Engineering)

Time: 3 Hours **Max Marks: 60**

All parts of the Question must be answered at one place

PART-A

Answer any Three questions Part-A **[3 X 12 = 36 M]**

1. a) What are the principles for unit of measurement of items of work? 6 M
   b) Explain the method of detailed estimation? 6 M
2. Estimate the quantity of earth work for a portion of a road from the given data. Formation width of road is 9.0 m side slopes 1.5: 1 in cutting. R.L of formation 139.00 at 200 m and a downward gradient of 1 in 200. 12 M

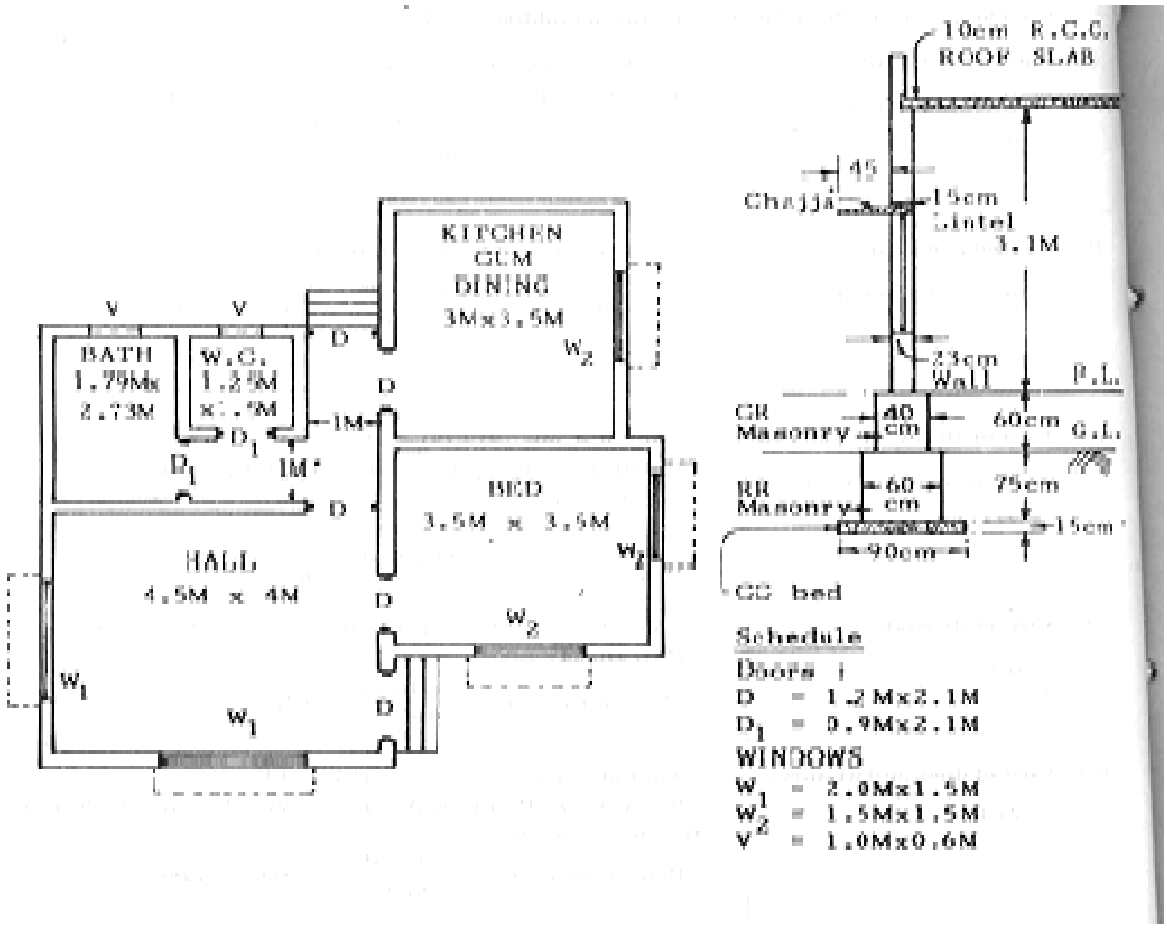
Distance (m)	200	250	300	350	400	450	500	550	600	650
R.L of ground (m)	139.2	138.35	138.2	137.65	138	137.2	135.1	135.9	136.6	136.2

3. a) Explain the detailed specifications of the Mosaic flooring and Random Rubble stone masonry? 6 M
   b) Prepare a rate analysis for the following items 6 M
      (i) R.C.C work in columns with proportion 1:2:4 – unit cu.m.
      (ii) Brick work in foundation and superstructure with 1:6 - unit cu m.
4. Prepare a detailed estimate of a R.C.C roof slab of 3 m clear span 6 m long and thickness of 12 cm. The slab has bearing of 300 mm on the walls on either side. The R.C.C slab has the following reinforcement. And prepare bar bending schedule. 12 M
   i) 10 mm ϕ main bars @ 12 cm c/c
   ii) 8mm ϕ distribution bars @ 20 cm c/c
5. What is the BIM? And write process of the BIM 12M

PART-B

Answer any ONE question from Part-AB **[1 X 24 = 24 M]**

6. Estimate the quantities of the following items of a building in (fig.1) by general method. 24 M
   i) Earthwork work in excavation in foundation ii) Cement concrete in foundation
   iii) D.P.C iv) Brick work in foundation and plinth
   v) I class Brick work in super structure



7. a) What is contract? Explain the types of contracts in civil engineering? 12 M

   b) Estimate of earth work an irrigation canal has the following details: 12 M
   Bed width 6m, top width of left bank 2.5m, top width of right bank 1.5m, side slope in cutting 1:1, side slopes of both banks 1.5:1, height of bank from bed 2.15m, longitudinal slope of bed 1 in 5000, R.L of bed level at station 1 is 97.40. The distance between stations is 50m.

Station :	1	2	3	4	5	6
R.L of G.L:	100.2	100.4	100.65	100.8	99.58	99.10

AR18

CODE: 18HST404 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

MANAGERIAL ECONOMICS AND MANAGEMENT SCIENCE

(Common to EEE & ECE)

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 Law of Demand. What are its exceptions? Explain.	6 M
	b)	Managerial Economics is the application of economic theory to business management. Discuss the nature and scope.	6 M

(OR)

2.	a)	Define demand forecasting and explain various survey methods of demand forecasting.	6 M
	b)	Determine factor governing the demand forecasting.	6 M

UNIT-II

3.	a)	Explain elements of cost with ladder diagram.	6 M
	b)	The following information related to a manufacturing Sales Rs. 2,50,000/- Variable cost Rs. 1,50,000/- Profit Rs. 40,000/- Find i) P/V Ratio, ii) Break- even sales and iii) Margin of Safety.	6 M

(OR)

4.		Explain the law of variable proportions with suitable table and diagram.	12 M

UNIT-III

5.	a)	Compare and contrast between perfect competition and Monopoly with suitable diagram	6 M
	b)	Write short notes on: (i) Seal bid pricing (ii) Going rate pricing (iii) Block pricing	6 M

(OR)

6.	a)	Define perfect competition. Explain its features.	6 M
	b)	Price output determination in market period under perfect competition.	6 M

UNIT-IV

7.	a)	What is motivation? Explain Maslow's theory of human needs.	6 M
	b)	State and compare the X and Y theories of motivation proposed by Mc.Gregor.	6 M

(OR)

8.	a)	Define management. State the importance of management	6 M
	b)	Define Merit rating? Explain different methods of merit rating?	6 M

UNIT-V

9.	a)	What is Marketing mix? Describe various elements of marketing mix	6 M
	b)	Discuss the operative functions of Human resource management?	6 M

(OR)

10.	a)	Explain the job evaluation. What are the methods of job evaluation?	6 M
	b)	Describe in detail the steps in performance appraisal.	6 M

***

AR18

CODE: 18HST403 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

AUTONOMOUS

IV B.Tech I Semester Supplementary Examinations, May, 2022

MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

Mechanical 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	What is the difference between managerial economics and microeconomics?	6M
	b	Discuss the determinants of law of demand.	6M
		OR	
2.	a	Explain the types of demand	6M
	b	Explain the Law of Demand and its exceptions.	6M

UNIT-II

3.	a	Discuss the managerial applications of price elasticity of demand.	6M
	b	Explain the different types of elasticity of demand.	6M
		OR	
4.	a	Write a note on demand forecasting with examples.	6M
	b	What do you understand by Judgmental approach? Explain with help of examples.	6M

UNIT-III

5.	a	Define production function with help of one variable input.	6M
	b	Explain the determinants of breakeven analysis	6M
		OR	
6.	a	What do you understand by economies scale? Explain with help of examples.	6M
	b	Write a note on MRTS with help of diagram	6M

UNIT-IV

7.	a	Explain the determination of equilibrium price in the long-run under perfect competition	6M
	b	Explain the importance of capital budgeting.	6M
		OR	
8.	a	Explain the difference between the monopoly and monopsony with examples.	6M
	b	Write a note on market structure.	6M

UNIT-V

9.	a	Discuss the advantages and disadvantages of double entry book keeping	6M
	b	Explain the importance of Balance sheet with simple adjustments.	6M
		OR	
10.	a	What do you understand by financial accounting?	6M
	b	Write a note on Journal, Ledger and Trial Balance.	6M

***

AR18

CODE: 18CST416 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

WEB TECHNOLOGIES

(Common to CSE & IT)

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)	Design a Login form which includes Username, Password textboxes, Submit and Reset Buttons	6M
	b)	How to create links in HTML? Explain with an example.	6M
		(OR)	
2.	a)	Write the syntax for CSS style rule to HTML document? Give the example	6M
	b)	What is the use of Box Model in CSS	6M

UNIT-II

3.		Write a JavaScript Code that reads an Integer and display a message weather it is perfect number or not?	12M
		(OR)	
4.		Explain Angular JS arrays in detail with example program	12M

UNIT-III

5.		What is DTD and Explain the purpose of DTD with an example	12M
		(OR)	
6.	a)	What is XML Schema? Design an XML Schema for the following XML document Books.xml:	6M

```
<? xml version="1.0"?>
<employee-list>
        <employee>
                <firstname>Nageswararao</firstname>
                <lastname>G</lastname>
                <salary>1000000 </salary>
        </employee>
</employee-list>
```

	b)	Analyse the differences between DOM and SAX XML Parsers	6M

UNIT-IV

7.	a)	Write a short note on java.sql Package	6M
	b)	List various Classes and Interfaces available in Servlet API	6M
		(OR)	
8.		Explain the different steps involved in connecting to a database from a JAVA application with an example program? Database: Oracle	12M

UNIT-V

9.	a)	Explain about JSP directives with example	6M
	b)	Write the purpose of jsp:forward action element? Give example	6M
		(OR)	
10.		Explain about Servlet life cycle with suitable example.	12M

***

AR16

CODE: 16CE4027 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

ESTIMATION AND QUANTITY SURVEYING

(Civil Engineering)

Time: 3 Hours **Max Marks: 70**

Answer any Three questions Part-A **[3 X 14 = 42 M]**

PART-A

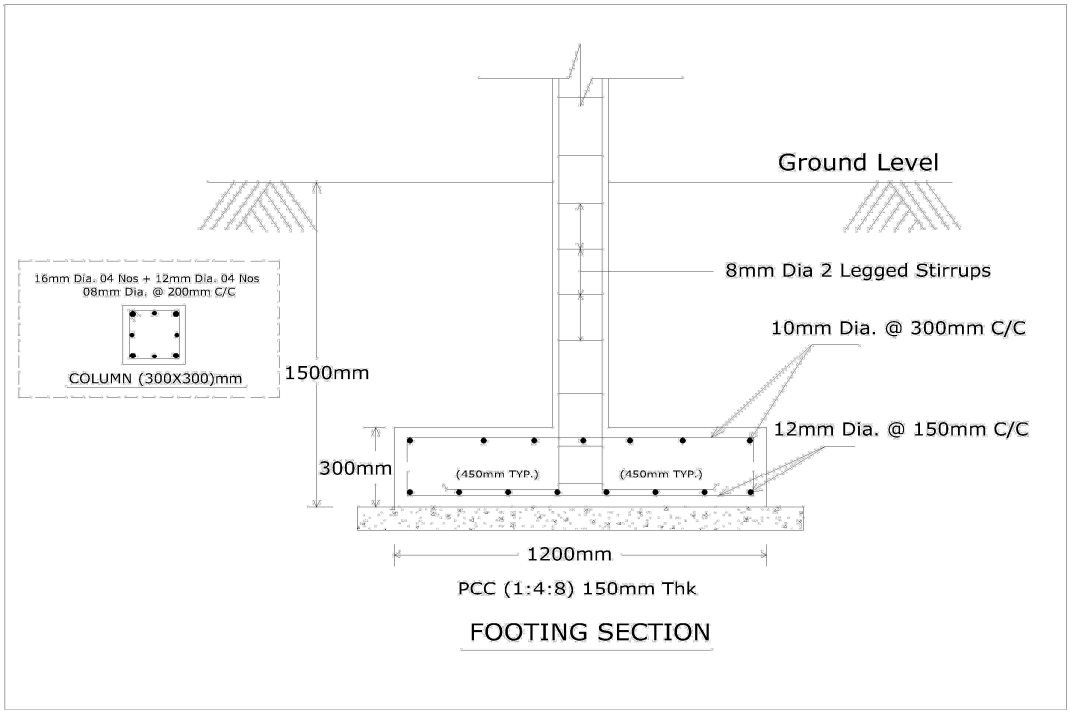
1. a) Differentiate between detailed estimate and abstract estimate. 7M
   b) When do you prepare revised and supplementary estimate 7M

2. a) Prepare the rate analysis for VRCC (1:1.5:3) with 20mm nominal size of Coarse aggregate also with 0.8% of reinforcement. 7M
   b) Prepare the rate analysis for 20mm thick cement plastering with CM (1:6). 7M

3. a) Estimate the quantity of earthwork in cutting for a road of 10m formation width with the following data using mean sectional area method or trapezoidal method. Side slop is 2:1 (H: V) and no cross slop. 14M

Chainage (meters)	0	30	60	90	120	150
Ground Level	80.50	79.30	81.40	84.00	81.00	83.0
Formation level	75.00	Rising gradient of 1 in 30				

4. a) Prepare detailed estimate & schedule of bars of a R.C.C element from the drawing shown in below figure including RCC work qty, centering & shuttering and steel reinforcement in detail shall be taken separately. 14M

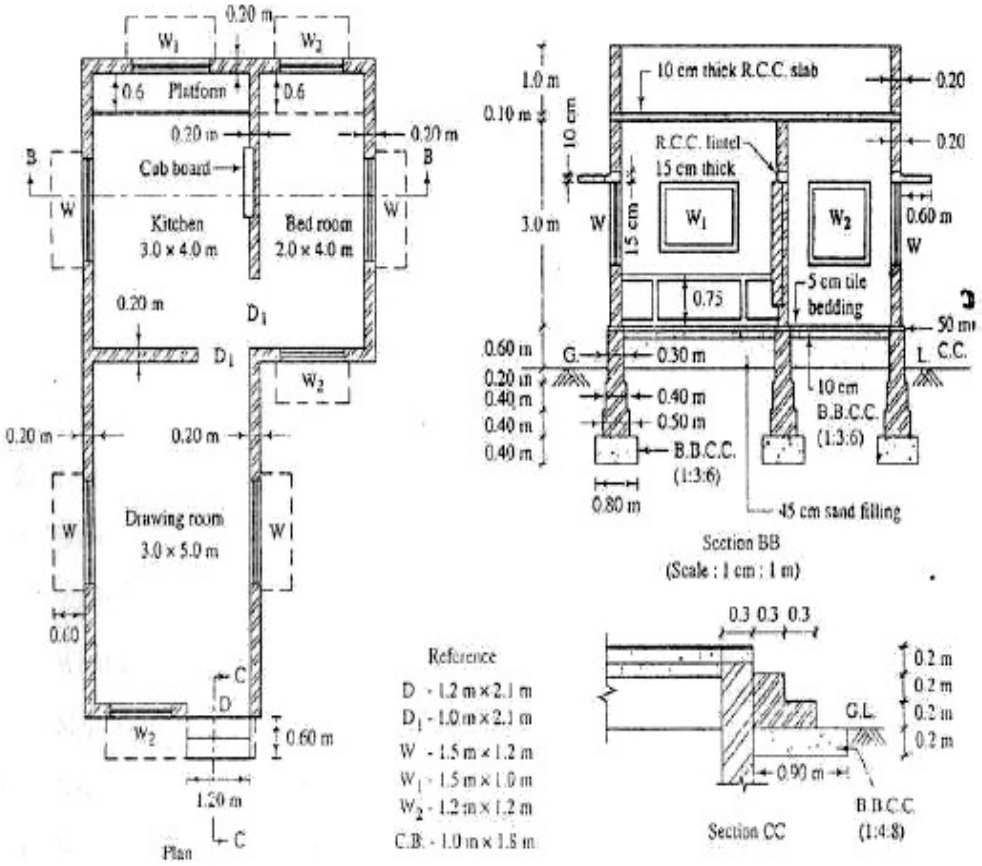


5. Explain detailed project report (DPR) 14M

PART-B

Answer any one question from Part-B [1x28=28M]

6. a) Prepare an estimate of building shown in below Figure using long wall and short wall method for the following items, (i) Earth work excavation for the foundation (ii) PCC (1:3:6) for Flooring bed and (iii) Flooring with vitrified tiles. 28M



7. a) Prepare an estimate of building shown in above Figure using centre line methos for the following items, (i) Brick work with CM (1:6) for super structure (ii) Ceiling plastering with CM (1:3) and (iii) Inside and Outside wall painting work. 28M

AR16

CODE: 16ME4030 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

INDUSTRIAL AUTOMATION

(Mechanical Engineering)

Time: 3 Hours **Max Marks: 70**

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 automation. Explain reasons for automation	6M
	b)	Explain automation principles and strategies	8M
		(OR)	
2.	a)	Describe ten strategies for automation and production system	8M
	b)	Explain the hydraulic and pneumatic components used in automation	6M

UNIT-II

3.	a)	Discuss the classification of transfer lines	6M
	b)	A Geneva with eight slots is used to operate the worktable of a dial indexing machine. The slowest workstation on the dial indexing machine has an operation time of 2.5 seconds, so that the table must be in a dwell position for this length of time. (i) At what rotational speed must the driven member of the Geneva mechanism be turned to provide this dwell time? (ii) What is the indexing time each cycle?	8M
		(OR)	
4.	a)	Discuss the terminology used in transfer line analysis	6M
	b)	An eight station rotary indexing machine operates with an ideal cycle time of **20s**. The frequency of line stop occurrences is **0.06 stops/cycle** on an average. When a stop occurs it takes an average of 3min to make repairs Determine the following: i) Average production time ii) Average production rate iii) Line efficiency	8M

UNIT-III

5.	a)	Discuss assembly operations performed on manual assembly line	6M
	b)	The total work content time of a certain assembly job is 7.8 min. The estimated downtime of the line is D = 5% and the required production rate is Rp = 80 units/hr. i) Determine the theoretical minimum number of workstations required to optimize balance delay. ii) For the number of stations determined in part (i), compute the balance delay d.	8M
		(OR)	
6.	a)	Discuss the line balancing Algorithms	6M
	b)	Discuss the fundamentals of automated assembly systems	8M

UNIT-IV

7.	a)	Explain ten principles of material handling systems	8M
	b)	Describe conveyor operations and features	6M
		(OR)	
8.	a)	Describe Automatic guided vehicles management and safety	6M
	b)	Explain AS/RS types and their applications	8M

UNIT-V

9.	a)	Explain the basic functions of Machine vision and how the image processing and analysis can be done	8M
	b)	Explain the coordinate measuring machine operation and programming	6M
		(OR)	
10.	a)	What are the steps to be considered on a shop floor for implementing lean manufacturing principles?	6M
	b)	Define agile manufacturing. How reorganizing can be done in the production system for agility	8M

AR16

CODE: 16EC4028 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, May, 2022

DIGITAL IMAGE PROCESSING

(Electronics and Communication Engineering)

Time: 3 Hours **Max Marks: 70**

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)	Draw and explain the basic elements of Digital image processing system.	10M
	b)	Define the terms i) 4-adjacent ii) 8-adjacent	4M
		(OR)	
2.	a)	How is an image formed in human eye? Explain the importance of Brightness adaptation and discrimination in image processing.	10M
	b)	Assume that a 15m high structure is observed from a distance of 75m. What is the size of the retinal image?	4M

UNIT-II

3.	a)	Obtain the Haar Transform matrix of size N=8?	10M
	b)	Explain 1D and 2D Discrete Fourier Transform in detail.	4M
		(OR)	
4.	a)	Generate the Hadamard Transform for N=4?	10M
	b)	Explain the Properties of 2D Discrete Fourier Transform.	4M

UNIT-III

5.	a)	What is Histogram Equalization? Discuss in detail about the procedure involved in histogram matching.	7M
	b)	Explain about spatial filtering in frequency domain.	7M
		(OR)	
6.	a)	What is the objective of image enhancement? Define spatial domain and point processing.	7M
	b)	What is meant by Laplacian transform? Using 2^{nd} order derivatives develop a Laplacian mask for sharpening.	7M

UNIT-IV

7.	a)	With the help of block diagram explain about degradation model.	7M
	b)	Explain in detail Constrained Least Squares Filtering.	7M
		(OR)	
8.	a)	Define image restoration. Explain the operation of inverse filtering.	7M
	b)	List the properties of the first and second derivative around edge.	7M

UNIT-V

9.	a)	Compare Lossy and Lossless Image Compression.	6M
	b)	Describe the procedure for image segmentation based on (a) Region growing (b) region splitting & merging, with relevant examples.	8M
		(OR)	
10.	a)	Explain the need for image compression. How Hufman encoding approach is used for compression? Is it lossy? Justify.	7M
	b)	Determine the concept of edge linking and boundary detection.	7M