Code No. 318/O

FACULTY OF ENGINEERING

B.E. 4/4 (Civil) II – Semester (Old) Examination, May / June 2018

Subject: Construction Management & Administration

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1 What is construction schedule?
2 List the functions of construction management.
3 What is the principle of flexibility and stability in an organization?
4 Mention the economics of large scale production.
5 Differentiate between direct cost and total cost.
6 Define cost slope, where it is used?
7 What do you mean by rescheduling? Why is it essential?
8 Describe different types of tenders.
9 What is a basic solution in LP problem?
10 List out the limitations of linear programming.

PART – B (50 Marks)

11 a) What are the tender documents? Discuss briefly the contents of a typical tender document. 5
b) Explain the significance of construction management. 5

12 a) A project consists of following activities with their durations in week develop the network diagram. 6

Activity	a	b	c	d	e	f	g	h
Immediate predecessor	--	--	--	a,b	a	b	d	c, e, g
Duration	4	6	3	8	4	7	5	8

b) A project is expected to take 15 months along the certified path having a standard deviation of 3 months. What is the probability of completing the project within 15 months? 4

13 Details of activity cost in Rs and duration in week of a project are given in the following table. Indirect cost is Rs. 8000 / week. Determine the optimum duration and cost of the project. 10

Activity	Normal Duration	Normal Cost Rs.	Crash Duration	Crash Cost Rs.
1-2	8	6,000	5	8,000
1-3	4	4,000	2	7,000
2-3	0	--	--	--
2-4	6	5,000	3	8,000
3-5	5	7,000	3	10,000
4-6	8	5,000	6	8,000
5-6	7	6,000	4	7,000

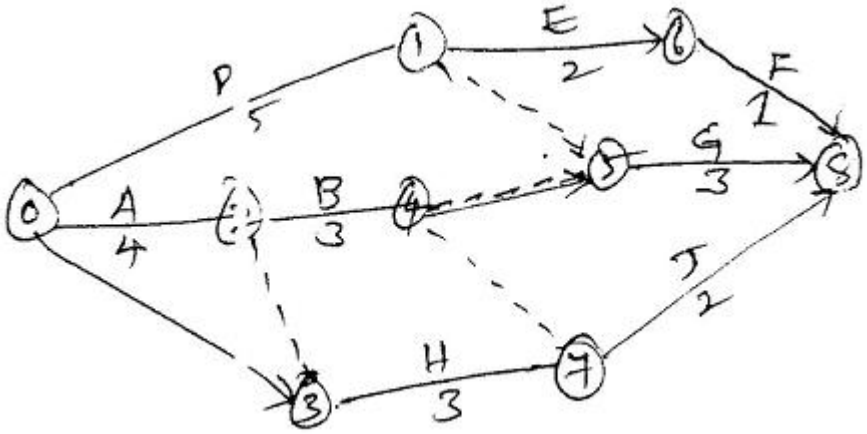
14 a) What is the importance of safety in construction? Mention the safety measures to be taken during the hot bituminous works. 5

b) Explain briefly about the PPP method of project delivery. 5

15 The standard weight of a special purpose brick is 4.5 kg and it contains two basic ingredients A and B.

A costs Rs. 4.00 / kg and B costs Rs. 7.00 / kg strength consideration states that the brick not more than 3 kg of A and minimum of 1.5 kg of B. Since the demand for the product is likely to be related to the price of the brick, find out graphically minimum cost of the brick satisfying the above conditions. 10

16 a) Draw the time scaled network diagram for the following network. 5



b) Explain briefly the salient features of contract labor act. 5

17 a) Write a brief note on Canomical form of LP with example. 5

b) Write briefly about three time estimates of PERT. 5

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Code No. 530 / N

FACULTY OF ENGINEERING

B.E. 4/4 (Civil) II – Semester (New) (Main) Examination, May / June 2018

Subject: Estimating and Specifications

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part – A and any five questions from Part – B.

PART – A (25 Marks)

1) What is the relation between plinth area and carpet area? (3)
2) Explain cubic rate method of estimation. (2)
3) Explain the term contract. (3)
4) State the rules for deductions for plastering as per IS 1200? (2)
5) Describe the centre line method of estimating the quantity of earth work. (3)
6) What are the units in which DPC and skirting of a floor measured? (2)
7) Find out the proportions of various materials required to prepare a 1 cubic meter of 1: 4 cement mortar. (3)
8) Explain the use of security money. (2)
9) What is bar bending schedule? (3)
10) When do you know the actual cost of the project? (2)

PART – B (50 Marks)

11 a) What is revised estimate? Explain briefly. (5)
b) Differentiate between lift and lead. (5)

12 a) Write the detailed specification of damp proof course (2.5cm thick) C.C 1:1.5:3 (5)
b) Explain briefly about the specifications to be considered in RCC. (5)

13 Estimate the following items from the fig.1 by using centre line method. (10)
i) Excavation of foundation
ii) First class brick work from ground to plinth

14 Estimate the quantity of earthwork for a portion of a road from the following data. Formation width of the road is 10 m, side slopes are 1.5 : 1 in filling and 1 : 1 in cutting R.L. of formation is 103.5 m in an uniform upward gradient of 1 in 250. (10)

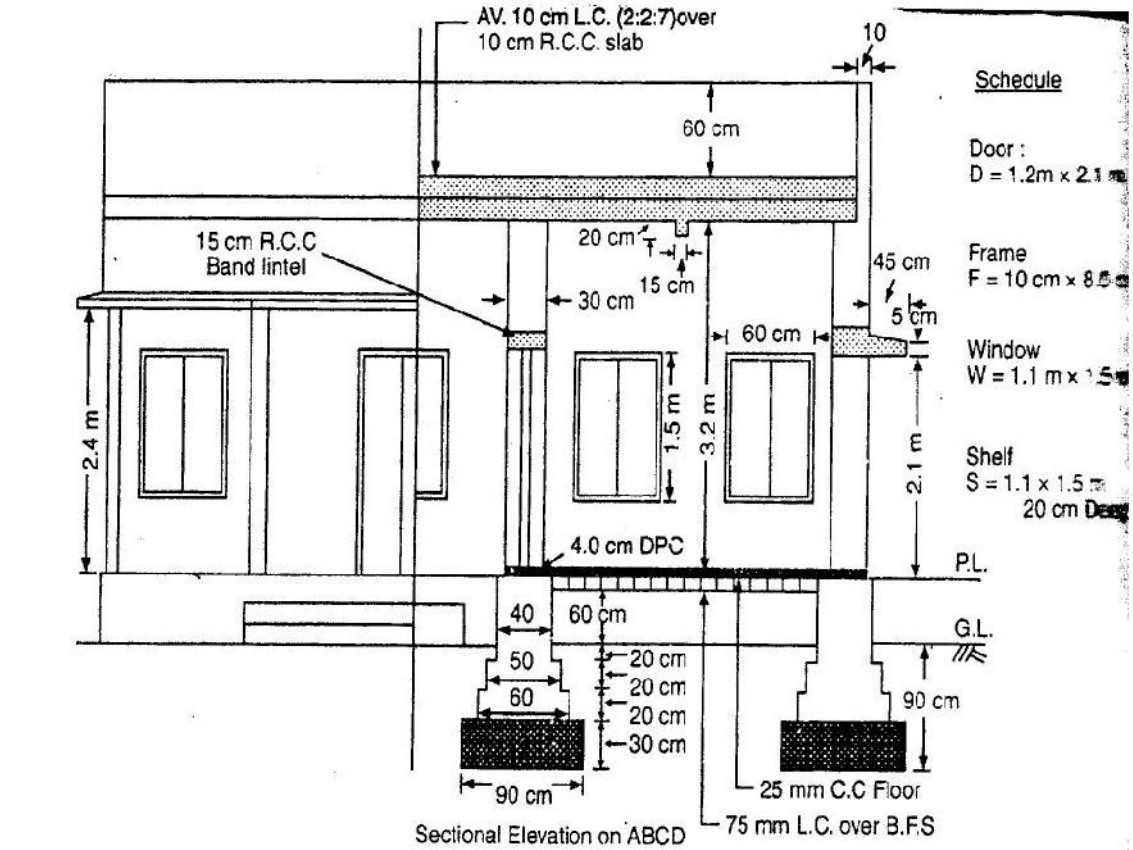
Chainage m	0	50	100	150	200	250	300
R.L. of ground	102.35	101.8	102.05	102.5	103.15	103.45	103

15 Design a septic tank for 25 users. Assume the required data

16 Estimate the steel quantity for the stair case shown in the fig.2.

17 Compute the unit rate for 1 : 4 : 8 with over burnt brick for 7.5 cm thick cement flooring. The labour requirement per cum is Head Mason 1/2no, Masons 10 nos and mazdoors 20 nos and the corresponding rate are Rs.450/-, Rs.400/-, Rs.350/- respectively. The cost of cement bag is Rs.350/- brick chips 20mm down Rs.2000/- per cum and sand Rs.1200/-cum. (10)

…2


AV. 10 cm L.C. (2:2:7)over
10 cm R.C.C. slab
10
60 cm
15 cm R.C.C
Band lintel
20 cm
15 cm
30 cm
45 cm
5 cm
60 cm
2.4 m
1.5 m
3.2 m
2.1 m
4.0 cm DPC
P.L.
G.L.
40
60 cm
50
60
20 cm
20 cm
20 cm
30 cm
90 cm
90 cm
25 mm C.C Floor
75 mm L.C. over B.F.S
Sectional Elevation on ABCD
Schedule
Door :
D = 1.2m x 2.1 m
Frame
F = 10 cm x 8.5 cm
Window
W = 1.1 m x 1.5 m
Shelf
S = 1.1 x 1.5 m
20 cm Deep

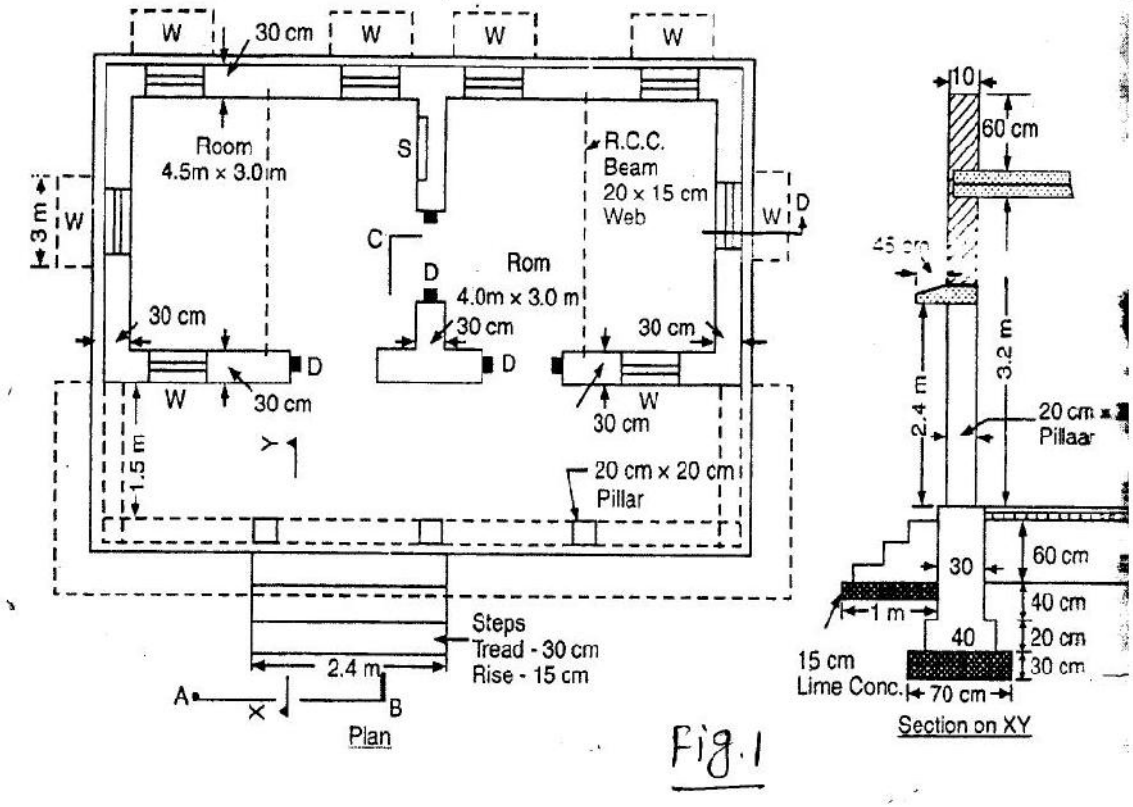
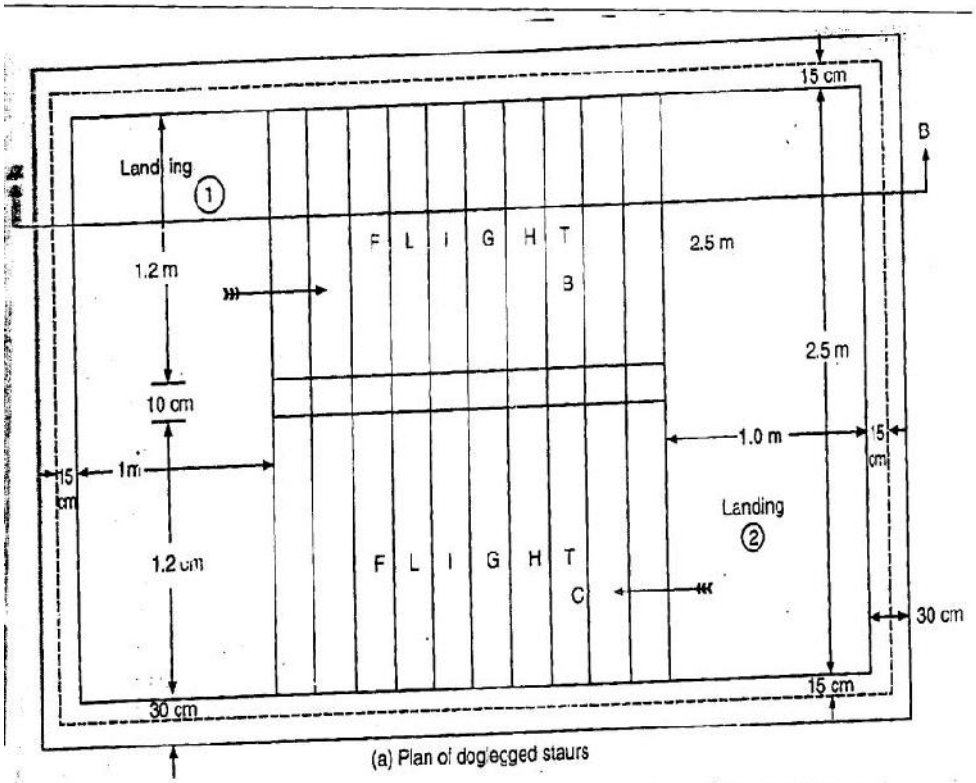
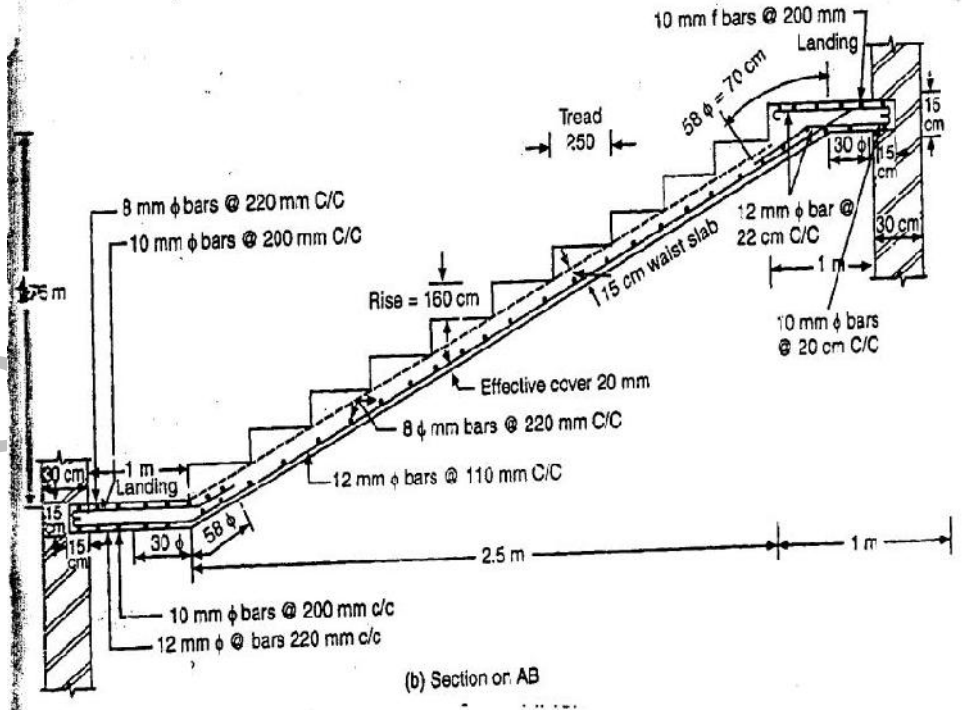

W
30 cm
W
W
W
Room
4.5m x 3.0m
S
R.C.C.
Beam
20 x 15 cm
Web
W
D
3 m
W
C
D
Rom
4.0m x 3.0 m
30 cm
30 cm
30 cm
D
D
W
30 cm
W
30 cm
1.5 m
Y
20 cm x 20 cm
Pillar
Steps
Tread - 30 cm
Rise - 15 cm
2.4 m
A
X
B
Plan
10
60 cm
45 cm
2.4 m
3.2 m
20 cm x
Pillaar
30
60 cm
1 m
40 cm
40
20 cm
15 cm
Lime Conc.
70 cm
30 cm
Section on XY

Fig.1



(a) Plan of dog legged staurs



(b) Section on AB

Flight B or C

Thickness of waist slab

= 150 = mm

size of tread = 250 mm

Fig. 2

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Code No. 330

FACULTY OF ENGINEERING

B.E. 4/4 (EEE/Inst.) II-Semester (Main & Backlog) Examination,

May / June 2018

Subject : Industrial Administration and Financial Management

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1 State the functions of management.
2 What are various types of organization?
3 Distinguish between process layout and product layout.
4 State the objectives of Time study.
5 What are the functions of PPC?
6 What are EOT and LOT?
7 Explain free float.
8 What is Economic Order Quantity (EOQ)?
9 What are the various types of over heads?
10 What is Financial Leverage? Briefly explain.

PART – B (50 Marks)

11 a) Explain Various types of Business Organization. 5
b) Discuss the principle factors in selecting a location for an Industry. 5

12 a) What is incentive? Explain different types of incentives. 4
b) What are performance rating factor and various types of Ratings? 6

13 a) Explain various types of control charts. 5
b) Differentiate Job shop type and Mass type production. 5

14 a) Explain various steps to be followed in constructing network diagrams. 5
b) What are PERT and CPM? Mention the applications of these techniques. 5

15 a) Explain the classification of materials. 4
b) How to determine EOQ? Obtain the expression for it. 6

16 a) Describe the Break-even analysis with a neat sketch. 5
b) What is depreciation? Explain any two methods of depreciation. 5

17 Write short notes on :
a) Characteristics of a good wage system 5
b) Quality circles – meaning and its important features 5

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CODE No. 348/O

FACULTY OF ENGINEERING

BE 4/4 (ECE) II Sem (Old) Examination May/June 2018

Subject : Radar and Satellite Communication.

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

Part – A (25 Marks)

1) What is basic principle of Radar? [3]
2) What is MTI Radar? [3]
3) Write about sequential lobing. [2]
4) Explain the operation of radar PPI type display. [2]
5) Describe Integration of Radar pulses. [3]
6) Describe noise bandwidth in receiver. [2]
7) State Kepler's First law of planetary motion with a neat sketch. [3]
8) Describe geo-stationary orbit. [2]
9) Explain true anomaly. [3]
10) Define sub-Satellite point. [2]

Part – B(5x10=50 Marks)

11) (a) Derive all three forms of Radar equation. Interpret them each.
(b) Describe FMCW altimeter. [6+4]

12) (a) What is meant by post detection and pre-detection integration in Radar? Explain.
(b) Discuss the terms integration improvement and integration loss in radar? [5+5]

13) (a) Discuss various measurement errors in altimeter.
(b) Explain different types of delay-line cancellers with application in Radar. [5+5]

14) (a) Describe Mono-pulse tracking Radar methods and state advantages of each.
(b) What is conical scan tracking? Compare the performance of mono-pulse with conical scan technique. [5+5]

15) (a) Describe Communication subsystem used in the satellite.
(b) What are the types of antennas used in Satellite? Describe any two antennas used. [4+6]

16) (a) Derive an expression for power received in a satellite link including all losses.
(b) Derive an expression for C/N ratio for an earth station. [5+5]

17) Explain Frequency Division Multiple Access (FDMA) technique. Describe how inter-modulation issues are tackled. [10]

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Code No.542/N

FACULTY OF ENGINEERING

B.E. 4/4 (ECE) II - Semester (New) (Main) Examination, May / June 2018

Subject : Data Communication & Computer Networks.

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART-A (25 Marks)

1. What are the functions of Data link layer? (3)
2. What is bit stuffing? Give an example. (2)
3. Describe the advantages of packet switching over circuit switching. (3)
4. Explain briefly IEEE 802.2 standard. (3)
5. What is flooding? Give its advantages. (2)
6. What is broadcast routing? (2)
7. What is the ATM AAL layer protocol? (2)
8. Distinguish between TCP and UDP protocols. (3)
9. Define the important aspects of security. (3)
10. What is the need of data encryption and decryption? (2)

PART-B (50 Marks)

11. a) Draw the OSI reference model and briefly explain all the layer function. (6)
    b) What are the topologies used for implementing local area network? Discuss their merits and demerits. (4)

12. a) What are the various switching technologies? Compare each them. (6)
    b) Explain the architecture of IEEE 802.11. standard. (4)

13. a) Explain about Bellman and ford Routing algowithinms with example. (4)
    b) Give the header format of IPv4 and explain. (6)

14. a) Explain the header format of UDP protocol and explain why UDP is preferred over TCP for Application Layer protocol . (5)
    b) Explain the structure of ATM adaptation layer. (5)

15. a) Explain the process of encryption and decryption with a neat sketch. (5)
    b) Explain the architecture and services of E-mail. (5)

16. a) Explain the ARQ protocols of data link layer function. (7)
    b) Write notes on sliding window Protocol of TCP. (3)

17. Write notes on any two the following: (10)
    a) Application layer protocols.
    b) CSMA\CD
    c) Digital signature Authentication Protocol

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Code No.360

FACULTY OF ENGINEERING

B.E. 4/4 (M/P) II - Semester (Main & Backlog) Examination, May / June 2018

Subject : Production & Operations Management

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1 List out the merits and demerits of product layout. (2.5)

2 What do you understand by standard time? How you will calculate it? (2.5)

3 State the objectives of forecasting. (2.5)

4 Differentiate between Qualitative and Quantitative models of forecasting. (2.5)

5 What is Master Production Scheduling? (2.5)

6 Differentiate between MRP and MRP-II. (2.5)

7 What are the various costs associated with inventory? (2.5)

8 List out assumptions in simple EOQ. (2.5)

9 Differentiate between Event and Activity. (2.5)

10 Write the applications of CPM and PERT? (2.5)

PART – B

11 (a) What is meant by Incentive? Explain different types of Incentive plans. (05)

(b) What are the factors affecting the selection of a plant location, Explain briefly. (05)

12 (a) What do you mean by aggregate planning? Explain concept of aggregate planning.
(b) What are the features of ERP? Also explain its limitations. (05)

13 (a) Explain the deterministic and stochastic inventory model. (05)

(b) A company uses 10,000 units per year of an item. The purchase price is Rs.1/- per item. Ordering cost is Rs.25/- per order. Carrying cost per year is 12% of the inventory value. Find,
(i) The EOQ
(ii) The number of orders per year
(iii) If the lead time is 4 (four) weeks and assuming 50 (Fifty) working weeks per year, find the reorder point.

14 Compute the simple exponential smoothing forecasts for the weekly demand data for TV sets, in a large appliance store is as given below. Consider the values of α (alpha) to be (i) 0.1 and (ii) 0.3 How do the forecasts compare with the actual demands materialized? Comment on the response of the forecasts to the ups and downs in the demand. (10)

…2

Week No.	Demand (Units)
1	15
2	20
3	14
4	10
5	16
6	20
7	18
8	20
9	13
10	21
11	19
12	16
13	23
14	21
15	20
16	16
17	18
18	17
19	21
20	23
21	25
22	19
23	24
24	25

15 A project is composed of seven activities whose time estimates are as follows. (10)

Activity		1-2	1-3	1-4	2-5	3-5	4-6	5-6
Times in weeks	to	1	1	2	1	2	2	3
	tm	1	4	4	1	5	5	6
	tp	7	7	18	1	14	8	15

(i) Draw a PERT network diagram
(ii) Calculate slack of each event
(iii) Identify Critical path
(iv) Find the duration of project.

16 (a) What are the different types of incentive plans? Discuss. (05)
(b) Briefly describe the Delphi technique. (05)

17 Write short notes on the following.
(i) SAP (2.5)
(ii) Break even analysis (2.5)
(iii) Mean Absolute Percentage Error (MAPE) (2.5)
(iv) Fulkerson's Rule (2.5)

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Code No. 362

FACULTY OF ENGINEERING

B.E. 4/4 (AE) II-Semester (Main & Backlog) Examination, May/June 2018

Subject: Quality Control & Reliability Engineering

Time: 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part – A, & answer any five questions from Part-B.

PART – A (25 Marks)

1 Define Quality

2 List the causes of variation

3 What are the benefits of Quality Control?

4 Explain ' X ' and 'R' chart

5 Explain process capability index.

6 When $\bar{d}$o you feel a process is in control?

7 Explain producers risk and consumers risk.

8 Define mean time to failure (MTTF) and mean time between failure (MTBF).

9 Explain product durability curve.

10 Explain operating characteristic curve for sampling plan based on reliability test.

PART-B (50 Marks)

11 a) Explain types of control charts. 4

b) Ten castings were inspected inorder to locate defects in them 6

Every casting was found to contain certain number of defects as given below. It is required to plot a C-chart and draw the conclusions.

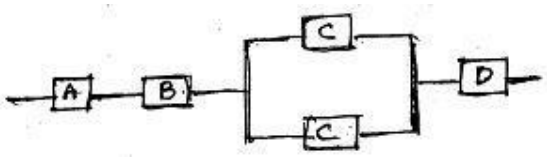
Casting No	1	2	3	4	5	6	7	8	9	10
No. of defects found	2	4	1	5	5	6	3	4	9	7

12 a) Explain single sampling plan. Explain its advantages and disadvantages. 4

b) A company has decided to use a single sampling with n=25, and c=2, to evaluate the incoming shipments. Suppose that AQL=0.01 and LTPD = 0.06, compute the producer's risk and consumer's risk by construction of OC-Curve. 6

13 a) Explain Reliability with an example 3

b) Find the reliability of the components, if A, B, C, D are 0.95, 0.98, 0.9 and 0.99 respectively. 7



14 Explain in detail various life testing of components 10

15 Explain pareto analysis of components reliability 10

16 Explain information flow during product analysis 10

17 Write short notes on the following:

a) Derating b) Sampling plans c) Design for reliability 4+3+3

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Code No. 396

FACULTY OF ENGINEERING

B.E. 4/4 (CSE) II - Semester (Main & Backlog) Examination, May / June 2018

Subject : Data Mining

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1 List different type of Attributes. Give an example for each. (3)

2 What is the significance of the Range, Quartiles and Interquartile Range in measuring dispersion of Data ? (3)

3 Define Data Generalization. Give an example. (2)

4 Differentiate ROLAP and MOLAP Data Mining Servers. (2)

5 Show the application of Antimonotone property in an itemset lattice formed with four unique items (a,b,c,d). (3)

6 Find the correlation between p and q by using the following contingency table. (3)

	q	q^-	
p	800	100	900
p^-	150	50	200
	950	150	1100

7 List the methods to evaluate the performance of a Classifier. (2)

8 Draw a neat diagram of perceptron and give the learning rule used. (3)

9 Differentiate Exclusive, Fuzzy and Sharing clustering techniques. (2)

10 Define different types of Outliers. (2)

PART – B (50 Marks)

11 (a) Compute Euclidean, Manhattan, Cosine and Supremum distance measures between two data objects X and Y define as X = (1, 3, 4, 0, 0, 4, 2, 8, 7), Y = (0,5, 0, 0, 5, 14, 6, 0, 0). (5)

(b) Explain Data Reduction techniques. (5)

12 (a) Describe Data Summarization with Attribute-oriented induction. (5)

(b) Explain OLAP operations with a neat diagram. (5)

13 (a) Compute frequent itemsets for the following transactional database without candidate generation. (7)

Tid	Items
T100	(K, A, D, B)
T 200	(D, A, C, E, B)
T 300	(C, A, B, E)
T 400	(B, A, D)

(b) Support in Multilevel Association rule Mining must be reduced as we go down the hierarchy, Justify the statement with suitable examples. (3)

14 (a) Find the classification label for the following data using multi layer feed forward networks Initial input, weight, and Bias values.

x1	x2	x3	w14	w15	w24	w25	w34	w35	w46	w56
1	0	1	0.2	-0.3	0.4	0.1	-0.5	0.2-	0.3	-0.2

$\{\theta 4 \ \theta 5 \ \theta 6\} = \{-0.4 \quad 0.2 \quad 0.1\}$ (6)

(b) Describe the steps to compute information gain of the attributes to find their rank. (4)

15 (a) Explain the steps in DBSCAN algorithm to cluster data objects. (5)

(b) Describe the significance of sum of the squared error in termination of K-Means algorithm. (5)

16 (a) How Data Mining is related to information retrieval, Artificial Intelligence and Pattern Matching? Give your answer with examples. (5)

(b) Explain 3-tier Architecture of Data Warehouse with a neat diagram. (5)

17 Write short notes on any **two** of the following:

(a) Constraint based frequent pattern mining (5)

(b) Bayesian belief networks (5)

(c) Outlier detection methods (5)

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Code No.554/N

FACULTY OF INFORMATICS

B.E. 4/4 (I.T.) II - Semester (New) (Main) Examination, May / June 2018

Subject : Embedded Systems.

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART-A (25 Marks)

1. Draw and Explain the Structure of PSW Register of 8051 Microcontroller. (2)
2. What are the characteristics of embedded system applications? (3)
3. Write an ALP to find the number of 0's in a given byte (3)
4. Write ALP to Double the number in Register R2 and put the result in Registers R3 (High Byte) and R4 (Low Byte). (2)
5. What is Task Scheduler? Explain the Functions of Task Scheduler. (3)
6. What is Re-entrant Function? What are the characteristics of Re-entrant Function? (3)
7. Distinguish between Native Linker and Locator. (2)
8. Differentiate simulator and emulator. (2)
9. Explain the purpose of CPSR register of ARM processor?. (3)
10. What are Network Enabled Systems? (2)

PART-B (50 Marks)

11.(a) Explain the Challenges in Embedded Computing Design. (4)

(b) Draw the Memory Organisation in 8051and Explain in detail. (6)

12. (a) Explain about Data Transfer and Logical Instructions with Examples. (6)

(b) Assume that 5 BCD data items are stored in RAM locations starting at 40H, as shown below. Write a program to find the sum of all the numbers. The result should be in BCD.

40 = (71)
41 = (11)
42 = (65)
43 = (59)
44= (37) (4)

13. (a) Explain how LCD displays can be interfaced with 8051 microcontroller. Write an Assembly Language Program for the same. (5)

(b) What is Semaphore? Explain with an example how semaphores are used for Solving the shared data problem. (5)

14. (a) Explain the need for Encapsulating Semaphores with an example. (5)

(b) Explain different methods of getting Embedded Software into the Target system. (5)

15. (a) How the CAN bus is different from I^2C bus ?Explain. (5)

(b).Write about flow of control statements in SHARC processor. (5)

16. (a) Explain Timer modes of operation of 8051 in detail. (5)

(b) What are the sequences of events involved in CALL instruction? (5)

17. Write short notes on the following:

(a) Debugging techniques in embedded systems. (5)

(b) ARM Architecture. (5)

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Code No.408/O

FACULTY OF INFORMATICS

B.E. 4/4 (I.T) II – Semester (Old) Examination, May / June 2018

Subject : Embedded Systems

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1. Define Micro Processor, Microcontroller and embedded systems. (2)
2. Why timers are required ? Give examples. (2)
3. What is mail box ? Define. (2)
4. Write three features of RTOS. (3)
5. Write short notes on two bust protocols that can be implemented on an ARM processors. (3)
6. What are semaphores ? (2)
7. Write short notes on timer functions in RTOS environment. (3)
8. List special function registers. (3)
9. Differentiate between hard real time scheduling considerations and soft real time scheduling considerations. (3)
10. What are Debugging techniques. (2)

PART-'B'(50 Marks)

11. a) Explain special function register TCON, TMOD, TRO, TRI with examples. (5)
    b) Write 8051 assembly language program to find cube of a given number. (5)

12. a) Explain levels of abstraction in embedded system design process. (5)
    b) Explain memory organization of 8051 microcontroller. Explain how external memory in interfaced in 8051 microcontroller. (5)

13. a) Write short notes on serial port programming and also explain SBUF and SCON registers. (5)
    b) Explain the interrupt handlling procedure in RTOS. (5)

14. a) Describe the main features of Micro C/OS-11 RTOS. What is a target System ? (5)
    b) Explain how memory and power is saved in RTOS. (5)

15. a) Explain the architecture of SHARC processor. (5)
    b) Explain Elevator controller 2 with a design example. (5)

16. a) Explain keyboard interfering with 8051 microcontroller. (5)
    b) Explain the debugging techniques in Embedded software. (5)

17. Write short notes on any two.
    a) Counter and timers in 8051. (5)
    b) Formalisms for system design with design examples. (5)
    c) Memory organization in ARM and SHARC processors. (5)

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