Code No. 11262

FACULTY OF ENGINEERING

B.E. 4/4 II - Semester (Main & Backlog) Examination, May / June 2019

Subject : Disaster Mitigation and Management (Except – M/P/AE)

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

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

PART – A (25 Marks)

1 State the objectives of "International decade of natural disaster reduction".
2 Give examples of natural disasters and human induced disasters
3 Give examples of geological based disasters
4 What is desertification?
5 List causes of a major power breakdown
6 List examples of chemical industrial hazards
7 Define GIS
8 How is remote sensing useful in disaster mitigation and management?
9 List the various warning and forecasting methods used to predict the occurrence of natural disasters.
10 Compare and contrast disaster management and disaster mitigation.

PART- B (50 Marks)

11 (a) Discuss human-induced disasters in detail.
(b) Discuss the causes and effects of droughts in detail.

12 (a) Write short notes on landslides and tsunamis.
(b) Explain geographical based disasters with examples.

13 (a) Describe the causes and effects of a chemical industrial hazard with the help of an example.
(b) How can traffic accidents be reduced?

14 (a) How is GIS used to manage disasters?
(b) How can remote sensing aid in response to a flood?

15 (a) Discuss why the economically backward people are most vulnerable section of population with respect to disasters.
(b) Discuss the various techniques to measure earthquakes.

16 (a) Write short notes on
(i) Landslides
(ii) Avalanches
(b) Discuss briefly the process of formation of a tropical cyclone.

17 (a) Agriculture in flood plains. Discuss and justify.
(b) How does a major power breakdown become a disaster? Discuss.

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Code No. 11320

FACULTY OF ENGINEERING

B.E. 4/4 (M/P/AE) II - Semester (Main & Backlog) Examination, May / June 2019

Subject : Rapid Prototyping Technologies (Elective-III)

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

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

Part-A (10x2.5=25 Marks)

1) What is RP Process Chain?
2) What is Post Processing in RPT?
3) What is meant by Photo Polymerization?
4) What are specifications of SLA?
5) Differentiate between SLS and FDM
6) List the applications of FDM Process
7) Explain the principle of 3DP Process
8) What are SLS Models?
9) List the applications of RP in Aerospace industry
10) What are Function Models?

Part-B (5X10=50 Marks)

11) Discuss the direct and indirect benefits of RPT Process.

12) a) Explain the working principle of layering technology
    b) What are the advantages, disadvantages and applications of SGC Process?

13. a) Explain the principle and applications of SLA Process.
    b) Explain the 3D Printing model and specifications.

14. Explain RP i) STL file problems, II) STL file repair methods.

15. Describe the applications of RPT with reference to:
    a) The pattern for investment and vaccum casting process
    b) Medical Models and Engineering Analysis Models

16. a) Explain the working principle, models and specifications of SLS Process along with case studies.
    b) Discuss the application of RP in developing Art Models.

17. Explain RP application to designs. State 10 points.

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Code No. 11473 / CBCS / S

FACULTY OF ENGINEERING

B.E. (Civil) V – Semester (CBCS) (Suppl.) Examination, May / June 2019

Subject: Environmental Engineering

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

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

PART – A (10x2 = 20 Marks)

1 List out various factors that govern demand for water.

2 What are the various factors which affect the selection of type of pumps?

3 List out various common impurities found in raw water.

4 Write the standards of portable water for the following:
   a) Turbidity
   b) Fluoride
   c) B-Coli index

5 Differentiate between “Disinfection” and “Sterilization”.

6 If a sewage sample shows three days BOD at $25^{o}C$ as 240 mg/L compute five day BOD for the sample at $25^{o}C$.

7 Explain surface loading rate with units.

8 What is the difference between aerated lagoon and activated sludge process?

9 Difference between septic tank and sludge digester.

10 List any four methods of sludge disposal.

PART – B (5x10 = 50 Marks)

11 a) The population of city is as follows:

Year	1880	1890	1900	1910	1920	1930	1940	1950	1960
Population	8000	12000	1700	22500	29000	37500	47000	57000	66500

Estimate the population of locality in 1980 by incremental, arithmetic and geometrical methods. 5

b) What is the significance of presence of phosphorous and nitrogen in water quality? 5

12 a) Design a sedimentation tank of water works to treat $12x10^{4}$ Lts of water per day. Assume velocity of flow in sedimentation tank as 20 cm/min. and detention period is 11 hours. 5

b) What do you understand by super-chlorination? What are the various methods of dechlorination? 5

13 a) In a BOD test, 3 ml of raw sewage was diluted to 300 mL and the D.O concentration of the dsiute same at the beginning was 8.8 mg / ℓ and 4.8 mg / ℓ at the end of 5 day incubation at 20^{o}C. Determine the BOD of the raw sewage. 5

b) What are the various types of "Sewer appurtenances" commonly used? Explain any two. Why sewer appurtenances are necessary. 5

14 a) Describe the activated sludge unit treatment with the following data for a population of 1,00,000. 5

i) Average sewage flow = 180 Lts/C/day
ii) BOD of the raw sewage = 200 mg/L
iii) Suspended solids of raw sewage = 320 mg/L
iv) BOD removal of primary treatment = 45%
v) Overall BOD removal desired = 90%

b) Discuss in detail about working and design aspects of Grit chambers. 5

15 a) With the help of neat sketch explain the design aspect of "Oxidation Pond". 5

b) Mention various methods commonly used for the disposal of refuse. Describe in detail one of them. 5

16 a) With the help of neat sketch explain working of "Trickling filter". 5

b) Explain with the help of neat sketch the principle of working of rapid sand filter. 5

17 Write short notes on the following:

a) Hardy – cross method 5

b) Vertical Flow clarifier. 5

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Code No. 11498/CBCS/S

FACULTY OF ENGINEERING

B.E. V – Semester (CBCS) (ECE)(Supple.) Examination May / June 2019

Subject: Digital System Design with Verilog HDL

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

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

Part – A (20 Marks)

1. Explain Compiler directives used in verilog.
2. What is meant by functional verification in verilog?
3. Write a verilog module to describe 1:4 Demultiplexer in data flow modeling.
4. Differentiate between task and function in verilog.
5. Write verilog model for 3:8 encoder in behavioral modeling.
6. Write verilog code for parity generator in behavioral modeling.
7. Explain significance of flow table in asynchronous sequential circuits.
8. Illustrate ASM chart for three state mealy FSM.
9. Differentiate between Full-custom and Semi-custom ASICs.
10. Realize the given functions using PROM F1 (A,B,C) = $\sum$M(0,1,2,4) and F2 (A,B,C) = $\sum$M(0,5,6,7)

Part – B (50 Marks)

11. a) Write about continuous assignments and illustrate bit wise and conditional Operators. 5M

    b) Classify hierarchical modeling in verilog and draw a model for ripple carry Counter. 5M

12. a) Explain blocking and non-blocking statement using example. 4M

    b) Write verilog code for verilog code for a 16:1 multiplexer using keyword task and verify its functionality using stimulus. 6M

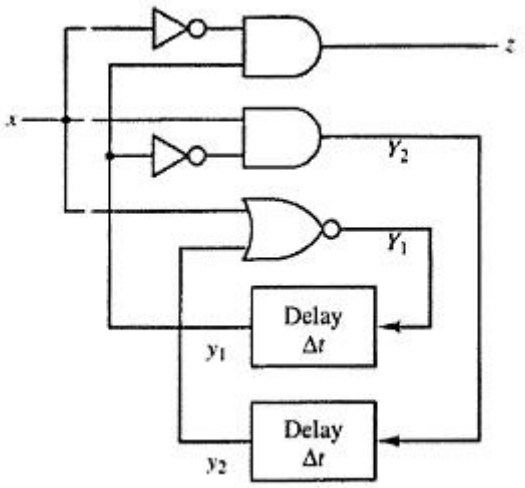
13. a) Differentiate latch and Flip flop and draw its timing diagram. 2M

    b) Design a sequential circuit for a modulo-8 Counter using JK flip flop. 8M

14. a) Explain one hot state controller design. 4M

    b) The fundamental mode circuit shown in figure, obtain its flow table and timing diagram. 6M

Contd…2

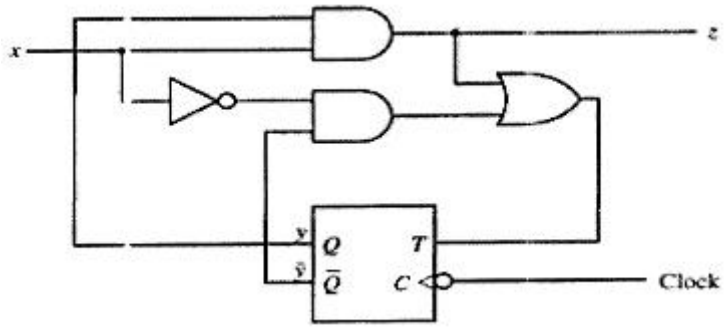


15. a) Realize the BCD to excess-3 code converter using PLA and tabulate the PLA programming table. 10M

16. a) Write a verilog module to describe 8-bit comparator in data flow and verify its functionality using stimulus. 6M

b) Explain timing controls in verilog. 4M

17. The given circuits as shown in figure obtain its state diagram, timing diagram and write its verilog code. 10 M



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Code No.11504/CBCS/S

FACULTY OF ENGINEERING

B.E. V – Semester (CBCS) (M/P) (Supple.) Examination, May/June 2019

Subject: CAD/CAM

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

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

PART – A (20 Marks)

1. What is design criteria? Explain. 2
2. Describe circle in parametric form. 2
3. What are homogeneous Coordinates? 2
4. Differentiate analytical and synthetic surface. 2
5. What is tool length compensation? 2
6. What are the types of statements in APT? 2
7. Different between GOTO and GO/TO statements. 2
8. What is machining centre? 2
9. State about the types of end effector used in industrial robot. 2
10. State the advantage of AGV in material handling system. 2

PART – B (50 Marks)

11. a) Explain about wireframe entities used in geometrical modeling. 5
    b) Draw the Bezier curve with following control points. Po(1,2), P_1(3,4), P_2(6,-6) and P_3(10,8). Determine five points on the Bezier curve. 5

12. a) What is a spline? Explain its properties. 5
    b) Explain surface of revolution and tabulated cylinder with neat sketches? 5

13. a) Explain various CAD database models. 5
    b) Prepare CSG tree for the fig 1. 5

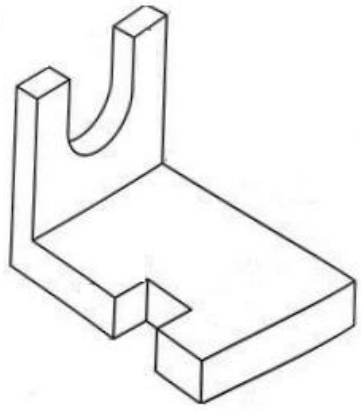
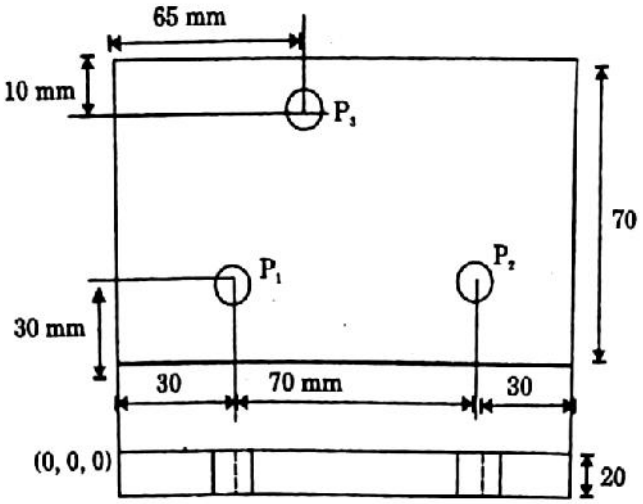


Fig. 1

contd…2

14. Write an APT part program to drill holes in a plate shown in fig.2. Spindle rotates at 500 rpm and feed rates is 25 mm/min. Take home position as 0,-50,-50. 10



15. a) Discuss various types of languages used in robot programming. 5
b) Explain point to point and contour motion of NC system with sketch? 5

16. a) Define the term part family. Explain types of part family with sketch. 5
b) What are the coding schemes used in GT. Explain hierarchical and chain type structure. 5

17. a) what is variant and generative type of process planning? 5
b) Discuss various types of non-contact inspection. 5

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Code No. 11508 / CBCS /S

FACULTY OF ENGINEERING

B.E. (A.E) V – Semester (CBCS) (Suppl.) Examination, May / June 2019

Subject: Automotive Transmission

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

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

PART – A (10x2 = 20 Marks)

1 What are the various components of a clutch?

2 State different types of gear boxes used in practice.

3 What is the function of a torque converter?

4 What are the advantages of hydraulic transmission drives over other drives?

5 What are the various parts of an Automatic Transmission system?

6 What are the advantages of over drive?

7 Explain how gears are controlled automatically in automatic transmission.

8 What are the different types of hydrostatic drives?

9 What are the advantages of automatic transmission?

10 Define clamping force in clutch.

PART – B (5x10 = 50 Marks)

11 Explain briefly the construction and working principle of cone clutch with neat sketch. 10

12 Explain briefly the construction and working principle of constant mesh gear box and show how the power flow from lay shaft to main shaft in different speeds. 10

13 Describe the working of single and multi stage torque converters with neat sketches. 10

14 Explain briefly the construction and working principle of white hydro torque drive. 10

15 Briefly explain the construction and working of Chevrolet drive automatic transmission. 10

16 Explain the working principle of cotal gear box briefly with neat sketch. 10

17 Draw and explain any one hydrostatic drive briefly. 10

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Code No. 11515/CBCS/S

FACULTY OF ENGINEERING

B.E. V – Semester (CBCS) (CSE) (Supple.) Examination, May/June 2019

Subject: Managerial Economics and Accountancy

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

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

1) Explain Principles of Time-perspective. 2

2) What is Income demand? 2

3) Define Monopoly 2

4) Explain "Margin of safety". 2

5) What is Fixed Capital? 2

6) What are subsidiary books? 2

7) Risk and uncertainty are related. Justify how? 2

8) Fixed and variable cost are independent. Do you agree? Justify your answer. 2

9) What are the effects of different payback periods? 2

10) Write Journal Entries for the following transactions. 2

4-10-2016 deposited in bank Rs.50,000

5-10-2016 withdrawn from bank Rs.20,000

PART – B (5 x 10 = 50)

11) Define Nature and Scope of managerial economics.

12) What are the techniques to forecast the demand?

13) What is perfect Market? Explain its features.

14) From the following information find out.

a) P/V Ratio ii) B.E.P iii) Fixed Cost iv) Margin of safety

Year	Sales(Rs.)	Profit(Rs.)
2002	3,00,000	40,000
2003	4,00,000	60,000

15) A project investment of Rs.50,000 and Expected net cash flows over under.

Year	1	2	3	4	5	6
Rs.	10,000	12,000	18,000	25,000	8,000	4,000

The cost of perform on capital is Rs.10% evaluate the project proposal under profitability Index.

16) Prepare bank reconciliation statement as on 30-06-2014 from the following particulars.

1) Balance as per cash book as on 30-06-2014 Rs.3,500

2) Interest on overdraft debited in pass book Rs.80.

3) Cheque issued but not presented for payment before 30-06-2014 Rs.600.

Contd…2

17) The following balances are extracted from the books of Ramlal on 31-12-2009. Prepare Trading, Profit and loss account and Balance Sheet as on date.

Debit	RS.	Credit	Rs.
Ramlal's Drawings	5,000	Ramlal's Capital	30,000
Furniture & Fittings	2,600	Bank Overdraft	4,327
Business Premises	20,000	Creditors	7,345
Opening stock	33,117	Return outwards	1,326
Sundry Debtors	17,300	Rent Received	320
Purchases	1,00,000	Sales	1,39,204
Return Inwards	1,905		
Discount	1,600		
Taxes and Insurance	1,000		
Total	1,82,522		1,82,522

Adjustments:

a) Closing Stock Rs.20,904

b) Write off depreciation on Premises @ 4% and on Furniture & fittings at 5%.

c) allow interest on Capital at 5%

d) Prepaid Insurance Rs. 200

e) Maintain a bad debts @ 5% on Sundry Debtors.

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