H.T No: | | | | | | | | | | | **R18** **Course Code: A30013**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech VI Semester Supplementary Examinations December-2022

Course Name: BUSINESS MANAGEMENT & FINANCIAL ANALYSIS

(Common for EEE, MECH & ECE)

Date: 05.12.2022 FN **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 Principles of management. 2 M
2. Recall Functions of management. 2 M
3. Explain Financial management. 2 M
4. Explain Marketing management. 2 M
5. Define National Income. 2 M
6. Illustrate Business cycle. 2 M
7. Summarize Break even analysis. 2 M
8. Classify different Markets. 2 M
9. Outline Objectives of business enterprises. 2 M
10. Classify different Ratios. 2 M

PART-B

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

11.A). Explain about FW Taylor scientific theory of management. 10M

OR

11. B). Examine Henry fayol contributions to management. 10M

12. A). Explain about the Human resource management and its nature, scope. 10M

OR

12. B). Explain the resent trends in Marketing Management. 10M

13. A). Outline the Law of demand and factors influencing and its limitations. 10M

OR

13. B). Classify the different types of Demand forecasting methods 10M

14. A). Explain about Break even analysis and its assumptions, limitations and applications. 10M

OR

14. B). Compare various types of market structures with degree of competition. 10M

(P.T.O..)

15. A). Explain the Double entry book-keeping and prepare the Format of Balance sheet. 10M

OR

15. B). Evaluate the financial position of the firm by Preparing Trading, profit and loss and Balance sheet for the year ending 31-3-2011. 10M

Particulars	Amount (Rs)
Drawings	4,000
Discounts allowed	1,500
Discounts Received	5,00
Office expenses	2,000
Manufacturing expenses	1,200
Bills payable	17,000
Bills receivable	10,000
Cash in hand	4,800
Cash at bank	30,800
Office rent	3,600
Capital	2,00,000
Machinery	60,000
Stock (1.4.2014)	32,000
Wages	1,00,000
Carriage inwards	1,000
Salaries	10,000
Factory rent	4,800
Repairs	8,00
Fuel and power	5,000
Furniture	11,000
Buildings	80,000
Sundry debtors	40,000
Sales	4,07,200
Purchases	2,44,000
Creditors	25,000
Return inwards	7,200
Return outwards	4,000

Closing stock Rs 40,000.

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H.T No: | | | | | | | | | | | **R18** **Course Code: A30421**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech VI Semester Supplementary Examinations December-2022

Course Name: MICROPROCESSORS & MICROCONTROLLERS

(Common for EEE & ECE)

Date: 07.12.2022 FN **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 out different registers used in 8086 microprocessor. 2 M
2. What are the functions of segment registers in 8086 microprocessor? 2 M
3. Distinguish between CALL and RET instruction in 8086? 2 M
4. Explain the function of ROL and RLC instructions in 8086. 2 M
5. Outline the Mode-2 input control signals used in 8255. 2 M
6. What is memory mapped I/O? 2 M
7. Analyze DJNZ instruction in detail in 8051. 2 M
8. Write short notes on Register Banks in 8051 microcontroller. 2 M
9. Describe the steps followed to service an interrupt. 2 M
10. When are timer overflow bits set and reset? 2 M

PART-B

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

11.A). Explain about internal architecture of 8086 microprocessor with a neat diagram. 10M

OR

11. B). Explain the operation of minimum mode of 8086 system with block diagram and timing diagram. 10M

12. A). i) What is an addressing mode? Illustrate the various addressing modes of 8086 microprocessor with examples. 7M

ii) Explain about any six data transfer instructions with examples in 8086. 3M

OR

12. B). The contents of different registers are given below. Calculate the 20 bit physical address of data for the following instructions. 10M

[SI]=3000H [DI]=4000H [DS]= 5000H [ES]=6000H [BX]=7000H [AX]= 8000H

i) MOV AX, [SI]
ii) ADD AX, [BX]
iii) MOV CX, 6000H[DI]
iv) MOV DX, [SI][BX]
v) SUB AX, 8000H[BX][DI]

(P.T.O..)

13. A). Interface an 8255 with 8086 to work as I/O port. Initialize port A as output port, port B as input port and port C as output port. Port A address should be 0740H. Write an ALP to sense the switch positions SW0-SW7 connected at port B. The sensed pattern is to be displayed on Port A, to which 8 LEDs are connected, while the port C lower displays number of ON switches out of 8 switches. 10M

OR

13. B). Design an interface between 8086 CPU and two chips of 16Kx8 EPROM and two chips of 32Kx8 RAM. Select the starting address of EPROM suitably. The RAM address must start at 00000H. 10M

14. A). Draw and explain the internal architecture of 8051 in detail. 10M

OR

14. B). i) Explain about 8051 logical instructions in detail. 6M

ii) Write 8051 program to find number of zeros within a byte. 4M

15. A). i) Explain the interrupt structure of 8051 microcontroller. 7M

ii) Distinguish between Timer and Counter in 8051 microcontroller. 3M

OR

15. B). Find the baud rate for the following, if XTAL=11.0592 MHz and SMOD=0 and SMOD=1 10M

i) MOV TH1,#-10
ii) MOV TH1,#-25
iii) MOV TH1,#-200
iv) MOV TH1, #-180

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H.T No: | | | | | | | | | | | **R18** **Course Code: A30216**

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech VI Semester Supplementary Examinations December-2022

Course Name: COMPUTER METHODS IN POWER SYSTEMS

(Electrical & Electronics Engineering)

Date: 09.12.2022 FN **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 the bus incidence matrix — 2 M
2. Explain demerits of Z-bus over Y-bus. — 2 M
3. What are the limitations of Newton Raphson Method? — 2 M
4. What is acceleration factor? Give its significance. — 2 M
5. Write the equation for converting the per unit impedance expressed in one base to another. — 2 M
6. Define sub transient reactance. — 2 M
7. Define the operator 'a' and express the value of 'a' and 'a^2' in both polar and rectangular form. — 2 M
8. Give the reason for faults in power system? — 2 M
9. Define steady state, dynamic and transient stability. — 2 M
10. Define synchronizing power coefficient. — 2 M

PART-B

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

11.A). Derive the expressions for Bus admittance matrices by Singular transformation Method. 10M

OR

11. B). A transmission line exists buses between buses 1 and 2 with per unit impedance 0.4pu. Another line of impedance 0.2 pu. is connected in parallel with it making it a double-circuit line with mutual impedance of 0.1pu. Obtain by building algorithm method the impedance of the two- circuit system. 10M

12. A). Explain load flow solution using N-R method in rectangular coordinates form when the system contains all types of buses. 10M

OR

12. B). i) Write the necessity of power flow studies. 3M

ii) Develop the power flow model using decoupled method and explain the assumptions to arrive at the fast decoupled load flow method. 7M

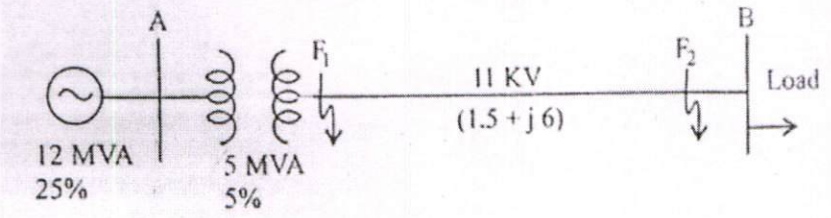
13. A). i) Write the advantages and disadvantages of per unit system. 4M

ii) Explain the types of reactors and mention their advantages and disadvantages. 6M

(P.T.O.)

OR

13. B). A 3-phase line operating at 11kV and having a resistance of 1.5ohm and reactance of 6ohm is connected to a generating station bus bars through a 5MVA step-up transformer having reactance of 5%. The bus bars are supplied by a 12MVA generator having 25% reactance. Calculate the short circuit KVA fed into a symmetric fault (i) at the load end of transformer and (ii) at the h.v. terminals of the transformer. 10M



14. A). i) What do you understand by sequence network? What is their importance in unsymmetrical fault calculations? 4M

ii) A generator rated 100MVA, 12.6 kV has X1 = X2 = 25% and X0 = 10%. Its neutral is grounded through a reactance of 0.2 Ω . The generator is operating at rated voltage, load is disconnected from the system when single line to ground fault occurs at its terminals. Find the sub-transient current in the fault phase and line to line fault current. 6M

OR

14. B). i) Derive an expression for fault current in line to ground fault. 6M

ii) Given $Z_0 = 0.199\angle 90$ per unit; $Z_1 = 0.175\angle 90$; $Z_2 = 0.175\angle 90$ calculate the fault current and line voltages for a Line -Line fault. 4M

15. A). i) Explain the methods to improve the steady state stability. 5M

ii) Describe the power angle curve. 5M

OR

15. B). i) List the assumptions made in the transient stability solution techniques. 4M

ii) Explain the swing equation by point by point method. 6M

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H.T No: | | | | | | | | | | | R18 | Course Code: A30217

CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech VI Semester Supplementary Examinations December-2022

Course Name: POWER SEMICONDUCTORS DRIVES

(Electrical & Electronics Engineering)

Date: 12.12.2022 FN **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 the advantages of Thyristor controlled drives? 2 M
2. Differentiate between semi converters and fully controlled converters. 2 M
3. What is meant by dynamic braking? 2 M
4. Mark the four quadrant operations of the drive on speed-torque plane. 2 M
5. What are various applications of Choppers? 2 M
6. Draw the circuit diagram of a two quadrant chopper. 2 M
7. What is Slip power? 2 M
8. List the applications of static scherbius drive. 2 M
9. When can be a synchronous motor is load commutated? 2 M
10. What are the advantages of voltage source inverter? 2 M

PART-B

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

11.A). Describe with appropriate voltage and current waveforms, the working of a single-phase full-converter fed DC series motor drive. Derive the expression for its input power factor. 10M

OR

11. B). A 220 V, 1500 rpm, 50 A separately excited motor with armature resistance is fed from a 3- phase fully-controlled rectifier. Available ac source has a line voltage of 440 V, 50 Hz. A star delta connected transformer is used to feed the armature so that motor terminal voltage equals rated voltage when converter firing angle is zero. Determine the value of firing angle when motor is running at -800 rpm and twice the rated torque. 10M

12. A). Explain with proper circuit diagram Speed-Torque characteristics of D.C motor under plugging, for the following types: (i) Separately excited dc motor (ii) Series motor. 10M

OR

12. B). What are dual converters? With a neat schematic diagram, discuss the operation of three-phase dual converters. 10M

13. A). Explain the operation of four quadrant chopper fed to the D.C series motor and also draw the current and voltage wave forms for continuous current operation. 10M

OR

13. B). Draw the block diagram and explain the operation of closed loop speed control scheme of DC Motor for speeds below the base speed. 10M

(P.T.O..)

14. A). Explain speed control of induction motor by AC Voltage Controllers. 10M

OR

14. B). Draw the circuit diagram and explain the working of a slip power recovery system using Static Kramer drive for a three phase induction motor. 10M

15. A). Describe the operation of self-controlled Synchronous Motor drives in detail. 10M

OR

15. B). How is the output voltage of a VSI improved by PWM techniques? Explain how you will use this converter for speed control of a synchronous motor. 10M

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H.T No: | | | | | | | | | | | R18 | Course Code: A30235

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech VI Semester Supplementary Examinations December-2022

Course Name: NON CONVENTIONAL ENERGY SOURCES

(Electrical & Electronics Engineering)

Date: 14.12.2022 FN | 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. Write differences between renewable and nonrenewable sources. 2 M
2. Explain in brief about solar radiation. 2 M
3. Write the merits and demerits of wind power? 2 M
4. What is the function of various components in wind mills? 2 M
5. Mention various biomass converting processes. 2 M
6. What is aerobic digestion? 2 M
7. What are the different types of OTEC? 2 M
8. Distinguish between wave and tidal energy. 2 M
9. Write the process of Direct Energy conversion. 2 M
10. Write the limitations of direct energy conversion system. 2 M

PART-B

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

11.A). Define the following: i) Latitude, ii) Declination angle, iii) Surface azimuth angle, iv) Hour angle and v) Zenith angle. 10M

OR

11. B). Illustrate the functions of various components in flat plate collectors. 10M

12. A). Describe the main considerations in selecting the site for wind generators. 10M

OR

12. B). With a neat sketch, explain the horizontal axis wind machine. 10M

13. A). Discuss the process of production of ethanol from biomass. 10M

OR

13. B). With a neat diagram discuss the biomass gasification method. 10M

14. A). Explain with a neat sketch, the working principle of closed cycle OTEC plant. 10M

OR

14. B). What are the advantages and disadvantages of ocean wave energy? 10M

15. A). Explain the Carnot cycle in Direct energy conversion. 10M

OR

15. B). Explain the principle of Direct Energy Conversion. 10M

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