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Department of Electrical Engineering
III Year VI Semester
6EE 3-01: Computer Architecture
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

1. What is the role of computer architecture in computer systems? Describe its parts.	BLT-2	CO-1
2. Explain the working of CISC with suitable block diagram.	BLT-2	CO-1
3. What are the types of representation of data in the number system? What is the representation of signed and unsigned data in a number system?	BLT-1	CO-1
4. What is the role of computer architecture in computer systems? Describe its parts.	BLT-2	CO-1
5. Explain the working of CISC with suitable block diagram.	BLT-1	CO-1

ASSIGNMENT-II

1. Explain the classification of memory types and its organization?	BLT-2	CO-2
2. Write down the cache memory mapping method in computer architecture.	BLT-3	CO-2
3. Differentiate between system memory and cache memory.	BLT-2	CO-2
4. What is virtual memory? How many types of implementations of virtual memory are there in computer architecture.	BLT-3	CO-2
5. Write a short note on memory management unit? How the different memories managed using MMU in computer architecture.	BLT-3	CO-2
6. Write a short note on the optical disk and explain different parts of the optical disk.	BLT-2	CO-2

ASSIGNMENT-III

1. What is Arbitration?	BLT-2	CO-3
2. What is PCI express bus. What is the data transfer rate of PCI bus. Explain its features.	BLT-2	CO-3
3. Define a bus interface unit and execution unit.	BLT-1	CO-3
4. Draw and explain the diagram of DMA controller.	BLT-2	CO-3
5. What do you understand by interrupt. Explain the steps through which the processor handled the interrupts.	BLT-2	CO-3

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III Year VI Semester
6EE 3-01: Computer Architecture
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ASSIGNMENT-IV

1. Explain the concurrent operation of EU and BIU? Q2. What are the addressing modes of 8086.	BLT-2	CO-4
2. Explain the I/O addressing modes in 8086.	BLT-1	CO-4
3. What are the addressing modes of 8086.	BLT-2	CO-4
4. Define programming model. Explain 80*86 architecture.	BLT-1	CO-4
5. Describe the operations in the instruction set.	BLT-2	CO-4

ASSIGNMENT-V

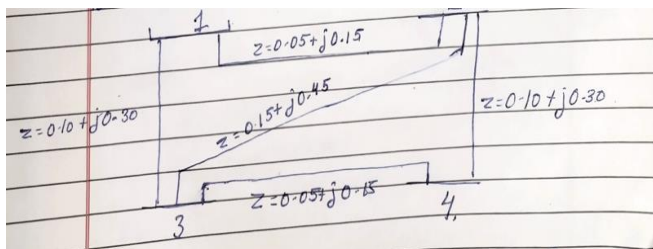|		
1. Describe the concept of pipelining and give the basic structure of the pipeline processor.	BLT-1	CO-5
2. What do you mean by Instruction Level Pipelining. What are the advantages and disadvantages of ILP.	BLT-2	CO-5
3. What is the role of DSP architecture in computer architecture.	BLT-1	CO-5
4. Explain the SOC architecture in detail.	BLT-2	CO-5
5. What do you mean by branch prediction? What is the influence of branch prediction algorithm on instruction set?	BLT-3	CO-5

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Department of Electrical Engineering
III Year VI Semester
6EE4-02: Power System – II
Note: Each Assignment of Maximum marks10.All question carries equal marks.
ASSIGNMENT-I

1	What are the different types of buses in power system? Explain.	BLT-2	CO-1
2	Explain Gauss-sidel method of load flow analysis using the flow chart.	BLT-2	CO-1
3	What do you mean by load study and aanlysis in a power system? Derive SLFE equation.	BLT-1	CO-1
4	For the system shown in fig the generators are connected at all four buses, while loads are at bus2 & 3 . Value of real and reactive power are listed in table. All buses other than the slack busare PQ buses. Assuming a flat voltage start. Find the voltage and bus angle at the three buses at the end of firs tG-S iteration. The shunt admittance is neglected	BLT-4	CO-1
5	Explain Newton Raphson(NR) method for solution of load flow study in detail.	BLT-2	CO-1

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Department of Electrical Engineering
III Year VI Semester
6EE4-02: Power System – II
Note: Each Assignment of Maximum marks10.All question carries equal marks.
ASSIGNMENT-II

1.	A 60 Hz 4 pole turbogenerator rated 100MVA 13.8KV has inertia constant of 10MJ/MVA. (a) Find stored energy in the rotor at synchronous speed (b) If the input to gen is suddenly raised to 60MVA for a load of 50MW. Find rotor acceleration	BLT-4	CO-2
2.	Deduce an expression for maximum steady state power which can be transmitted over a line [neglect capacitance of line] if voltage at each end is kept constant.	BLT-3	CO-2
3.	Explain different method for analysis of swing equation	BLT-2	CO-2
4.	Show that if the reactance X of the line be varied the resistance R remaining constant. Expression SS power that could be traasmitted over line woul be greatest when X – 1.732 * R	BLT-4	CO-2
5.	Explain SS limit of power system is 150MW. A generator with constant excitation is sulppling 75MW to system. Stimate the maximum`	BLT-2	CO-2

ASSIGNMENT-III

1	Explain various types of excitation systems,	BLT-2	CO-3
2	Explain the concepts and locations of shunt capacitor for voltage control and power factor improvement	BLT-2	CO-3
3	Explain tap changing transformer and basic STATCOM	BLT-1	CO-3
4	Let an uncompensated SMIB power system is operating in steady state with a mechanical power input inequal to 0.5 p.u. then δ_0 $=30^0 = 0.5236$ rad and $\delta_{max} = 150^{0} = 2.618$ rad. Consequently the clearing angle is $\delta_{cr} = 79.56^0 = 1.3886$. Analyze the system.	BLT-4	CO-3
5	A small system consists of 4 identical 500 MVA generating units feeding a total load of 1020 MW. The inertia constant H of each unit is 50 on 500 MVA base. The load varies by 1.5% for 1% change in frequency. When there is a sudden change in load by 20MW: Determine the system block diagram with constant H and D expressed on 2000MVA base. Find the frequency deviation assuming that there is no speed governing action.	BLT-5	CO-3

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Department of Electrical Engineering
III Year VI Semester
6EE4-02: Power System – II
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-IV

1	What is phasor Explain phasor measurement unit.	BLT-2	CO-4
2	Explain contingency analysis.	BLT-1	CO-4
3	Describe widw area monitoring system	BLT-2	CO-4
4	What is preventive system	BLT-1	CO-4
5	Explain the Energy management system.	BLT-2	CO-4

ASSIGNMENT-V

1.	What is power system economics? Explain various types of cost for power generation.	BLT-2	CO-5
2.	Explain the role of spot pricing in power system economics.	BLT-1	CO-5
3.	Explain transmission and distribution charges and ancillary services.	BLT-2	CO-5
4.	What is electrical market model?	BLT-1	CO-5
5.	Explain the components of electrical market?	BLT-2	CO-5

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Department of Electrical Engineering

III Year VI Semester

6EE4-03 POWER SYSTEM PROTECTION

Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

1	Discuss briefly the role of protective relays in modern power system.	BLT-2	CO-1
2	Discuss the essential qualities of a protective relay.	BLT-2	CO-1
3	what are the various components of a protection system? Briefly describe their functions with the help of schematic diagram.	BLT-1	CO-1
4	Discuss the classification of protective relay based on technology.	BLT-2	CO-1
5	Discuss the classification of Protective Scheme.	BLT-1	CO-1

ASSIGNMENT-II

1	What is a per unit system? What is its significance in power system Analysis?	BLT-1	CO-2
2	Discuss the principle of symmetrical components. Derive the necessary equation to convert phase quantities in to symmetrical components.	BLT-3	CO-2
3	Show that positive & Negative sequence currents are equal in magnitude but out of phase by 180 degrees in case of L-L fault.	BLT-4	CO-2
4	What are the various types of over current relays? Discuss their time-current characteristics.	BLT-2	CO-2
5	Discuss Time graded system & Current graded system for over current protective scheme.	BLT-2	CO-2

ASSIGNMENT-III

1	Describe the protection scheme generally employed for generator stator inter-turn fault and stator overheating.	BLT-2	CO-3
2	Describe Buchholz relay construction and principle of its operation. Draw its neat diagram for this.	BLT-2	CO-3
3	Explain protection of an alternator against excitation and prime mover failure.	BLT-1	CO-3
4	Draw schematic diagram for rotor earth fault protection, for alternator.	BLT-2	CO-3
5	Explain and draw schematic diagram of bus bar protection.	BLT-2	CO-3

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Department of Electrical Engineering
III Year VI Semester
6EE4-03 POWER SYSTEM PROTECTION
Note: Each Assignment of Maximum marks10.All question carries equal marks.
ASSIGNMENT-IV

1	Describe the principle of numerical protection. How is this method of protection different from conventional methods?	BLT-2	CO-4
2	With the help of block diagram discuss the operation of the numerical relay. What is a multifunction numeric relay.	BLT-3	CO-4
3	What are the advantages of numerical relays over conventional relays? Is there any disadvantage of numerical relays? If so, discuss the disadvantages.	BLT-2	CO-4
4	What is a data acquisition system? Discuss the functions of various components of DAS.	BLT-2	CO-4
5	What do you mean by aliasing? How can aliasing be removed? State and explain Shannon's sampling theorem.	BLT-3	CO-4

ASSIGNMENT-V

1 Discuss the various classification of CTs. Describe the construction of EMT CTs.	BLT-1	CO-5
2 What is Rogowski coil sensor? Describe its construction and operation & derive the expression for the voltage induced.	BLT-2	CO-5
3 Discuss the different types of VTs with their areas of applications.	BLT-2	CO-5
4 Discuss the procedure of Relay Testing.	BLT-2	CO-5
5 Write a short note on EMT programs.	BLT-1	CO-5

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Department of Electrical Engineering

III Year VI Semester

6EE4-04 Electrical Energy Conversion and Auditing

Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

1	Define the following terms with three examples of each : a) Primary and Secondary Energy b) Commercial and Non-commercial Energy. c)Renewable and Non-renewable Energy.	BLT-2	CO-1
2	What is the energy strategy for the future.	BLT-3	CO-1
3	What are the effects of energy use on Environment. Explain in detail.	BLT-2	CO-1
4	What is Energy Conservation & also write its benefits.	BLT-2	CO-1
5	Write down the any 10 important features of Energy Conservation Act.	BLT-1	CO-1

ASSIGNMENT-II

1	A fluorescent tube light consumes 40 W for the tube and 10 W for choke. If the lamp operates for 8 hours a day for 300 days in a year, calculate the total energy cost per annum if the energy cost is Rs.6/- per kWh	BLT-5	CO-2
2	What are the three modes of heat transfer? Explain with examples?	BLT-2	CO-2
3	If an electric heater consumes 4 kWh, what will be the equivalent kilocalories	BLT-2	CO-2
4	A three phase,10 kW motor has the name plate details as 415 V, 18.2 amps and 0.9 PF. Actual input measurement shows 415 V, 12 amps and 0.7 PF which was measured with power analyser during motor running.	BLT-4	CO-2
5	Explain the different types of Grades of Energy.	BLT-2	CO-2

ASSIGNMENT-III

1	List down the objective of energy management.	BLT-1	CO-3
2	Explain why managerial skills are as important as technical sklls in energy management?	BLT-2	CO-3
3	What are the various steps in the implementation or energy management in an organization	BLT-2	CO-3
4	Explain the role of training and awareness in energy management program?	BLT-2	CO-3
5	Explain briefly the difference between preliminary and detailed energy audits?	BLT-2	CO-3

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Department of Electrical Engineering
III Year VI Semester
6EE4-04 Electrical Energy Conversion and Auditing
Note: Each Assignment of Maximum marks10.All question carries equal marks

ASSIGNMENT-IV

1	What do you understand by the term "Heat Rate"	BLT-1	CO-4
2	Explain why power is generated at lower voltage and transmitted at higher voltages?	BLT-2	CO-4
3	What are the areas to be looked into for maximum demand reduction in industry	BLT-2	CO-4
4	What are the typical billing components of the two-part tariff structure of industrial utility?	BLT-1	CO-4
5	A process plant consumes of 12500 kWh per month at 0.9 Power Factor (PF). What is the percentage reduction in distribution losses per month if PF is improved up to 0.96 at load end?	BLT-3	CO-4

ASSIGNMENT-V

1	Explain why centrifugal machines offer the greatest savings when used with variable Speed Drives?	BLT-2	CO-5
2	Explain the working of a soft starter and its advantage over other conventional starters.	BLT-2	CO-5
3	What are the precautions to be taken in the case of energy efficient motor application?	BLT-1	CO-5
4	What are the advantages of energy efficient motors?	BLT-3	CO-5
5	Explain the principle of automatic power factor controller.	BLT-2	CO-5

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Department of Electrical Engineering

III Year VI Semester

6EE4-05: Electric Drives

Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

1	Explain Review of emf and torque equations of DC machine.	BLT-2	CO-1
2	Explain review of torque- speed characteristics of separately excited dc motor.	BLT-2	CO-1
3	Give brief explanation of armature voltage control for varying motor speed.	BLT-1	CO-1
4	What is flux weakening for high-speed operation.	BLT-2	CO-1
5	Draw and explain change in torque- speed curve with armature voltage.	BLT-4	CO-1

ASSIGNMENT-II

1	Explain Review of dc chopper and duty ratio control.	BLT-2	CO-2
2	Explain chopper fed dc motor for speed control.	BLT-3	CO-2
3	Give brief explanation of steady state operation of a chopper fed drive.	BLT-2	CO-2
4	Give different types of losses and give calculation of losses in dc motor.	BLT-2	CO-2
5	Draw and explain change in torque- speed curve with armature voltage.	BLT-3	CO-2

ASSIGNMENT-III

1	Explain Review of motoring and generating modes operation of a separately excited dc machine	BLT-2	CO-3
2	Explain regenerative braking in dc drive.	BLT-2	CO-3
3	Explain four quadrant operation of dc machine	BLT-2	CO-3
4	Explain single- quadrant chopper.	BLT-2	CO-3
5	Explain two-quadrant chopper.	BLT-2	CO-3

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Department of Electrical Engineering
III Year VI Semester
6EE4-05: Electric Drives
Note: Each Assignment of Maximum marks10.All question carries equal marks

ASSIGNMENT-IV

1	Explain Control structure of DC drive.	BLT-2	CO-4
2	Drive the dynamic equations of electric drive.	BLT-4	CO-4
3	Give brief explanation current controller specification and design.	BLT-2	CO-4
4	Drive the transfer function of dc motor with suitable block diagram.	BLT-4	CO-4
5	Draw and explain dynamic model of dc motor.	BLT-3	CO-4

ASSIGNMENT-V

1	Explain Review of induction motor equivalent circuit.	BLT-2	CO-5
2	Explain variation of torque-speed curve with applied voltage.	BLT-2	CO-5
3	Explain variation of torque-speed curve with applied frequency.	BLT-2	CO-5
4	Explain vector control of IM.	BLT-2	CO-5
5	Explain Direct torque control of I.M.	BLT-2	CO-5

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Department of Electrical Engineering
III Year VI Semester
6EE5-11: POWER SYSTEM PLANNING
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

1	Discuss the different planning tools.	BLT-2	CO-1
2	Explain the components of structure of power system with types of transmission and distribution networks?	BLT-2	CO-1
3	Discuss the electrical forecasting and its types.	BLT-1	CO-1
4	Explain the National and Regional planning India. Discuss their advantages and disadvantages also.	BLT-2	CO-1
5	What are the electricity regulations in India?	BLT-1	CO-1

ASSIGNMENT-II

1	Explain system adequacy and security of power system reliability.	BLT-2	CO-2
2	Explain the reliability evaluation and calculations.	BLT-3	CO-2
3	Explain the reliability planning criteria with respect to power generation planning?	BLT-2	CO-2
4	Explain the reliability planning criteria with respect to power transmission & distribution planning?	BLT-2	CO-2
5	Explain the roadmap for reliability and quality.	BLT-4	CO-2

ASSIGNMENT-III

1	With the help of block diagram, explain distributed power generation planning. List plan options, uncertainties and attributes.	BLT-2	CO-3
2	What are the factor affecting generation planning?	BLT-2	CO-3
3	Explain the integrated resource planning with respect to power generation planning?	BLT-3	CO-3
4	What do you understand by (1) Forced outage (2) Scheduled outage	BLT-1	CO-3
5	What are the generation system models in generation planning? How can it improve the power situation in India?	BLT-3	CO-3

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Department of Electrical Engineering
III Year VI Semester
6EE5-11: POWER SYSTEM PLANNING
Note: Each Assignment of Maximum marks10.All question carries equal marks

ASSIGNMENT-IV

1	Explain the strategy for transmission expansion in a power system.	BLT-2	CO-4
2	Explain the objectives of transmission planning.	BLT-1	CO-4
3	Explain the various network reconfigurations in transmission system.	BLT-2	CO-4
4	Discuss the various evaluation techniques.	BLT-1	CO-4
5	Explain the different distribution reliability indices.	BLT-2	CO-4

ASSIGNMENT-V

1	Explain the system architecture of CAPP.	BLT-1	CO-5
2	Explain the effect of power generation on environment.	BLT-2	CO-5
3	What are the sources of absorption and generation of reactive power in transmission and distribution lines?	BLT-1	CO-5
4	What is insulation coordination? Explain the principles of insulation coordination.	BLT-2	CO-5
5	Explain the greenhouse effect and its technological impacts.	BLT-2	CO-5

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