SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583
QUESTION BANK

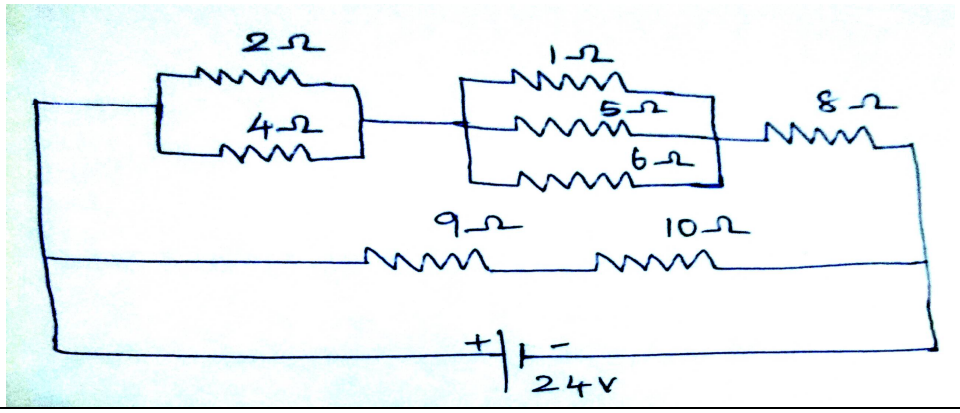
Subject Code : EMT (16EE209) **Course & Branch :** B.Tech – CIVIL
Year & Sem : II – B.Tech & I –Sem **Regulation :** R16

ELECTRICAL TECHNOLOGY
UNIT-I

1	Explain the construction and working principle of PMMC type instruments.	**[10M]**
2	Explain the various type errors occurred in a measuring instrument.	**[10M]**
3	What are the essential operating forces required in an instrument? Explain in detail.	**[10M]**
4	With relevant diagrams explain the following (a) Eddy current damping	**[5M]**
	(b) Air friction damping	**[5M]**
5	Calculate the monthly electricity bill of a consumer who is having the following loads and its operating times are given in the table. Assume the cost of electricity is Rs.3.00/unit.	**[10M]**

Sl. No.	**Name of the equipment**	**No. of loads**	**Power rating (W)**	**Operating time/day, Hours**
1	Ceiling fan	5	80	6 hours each
2	Florescent lamp	3	40	5 hours each
3	Incandescent lamp	2	60	2 hours each
4	Jet pump	1	1.0 HP	1 hour
5	TV	1	100	10 hours
6	Washing machine	1	500	2Hours
7	Iron box	1	1000	30 minutes
8	Mixie	1	750	10 minutes
9	Air conditioner	1	1 HP	5 hours

6	Explain the construction and working principle of repulsion type Moving iron instruments.	**[10M]**
7	Explain the construction and working principle of attraction type Moving iron instruments.	**[10M]**
8	Calculate the equivalent resistance of the circuit shown below and determine the current flow through in 6 ohm resistor. Also find the power consumed by the circuit.	**[10M]**

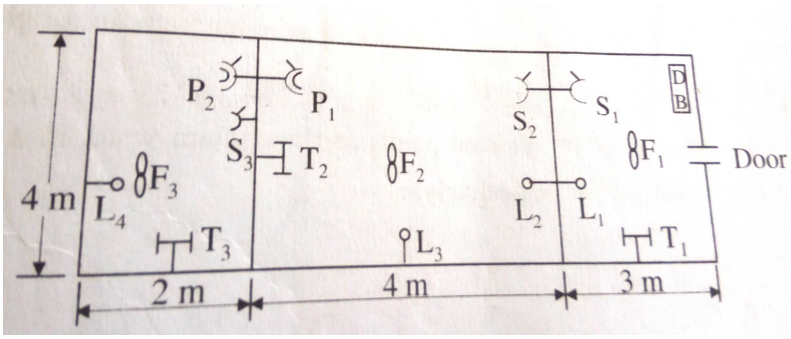
		
9	Define the following terms: (a) Accuracy	**[2M]**
	(b) Precision	**[2M]**
	(c) Error	**[2M]**
	(d) Resolution	**[2M]**
	(e) Sensitivity	**[2M]**
10	State and explain (a) Kirchoffs current law	**[5M]**
	(b) Kirchoffs voltage law	**[5M]**

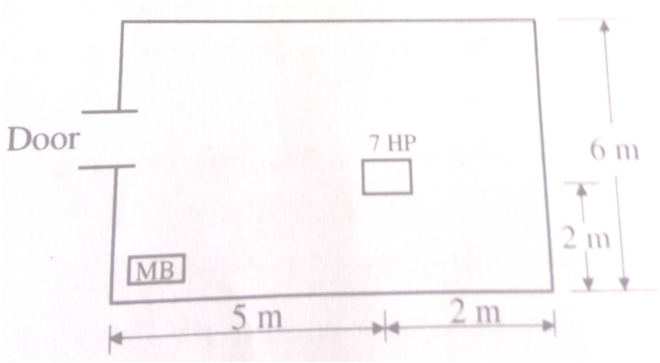
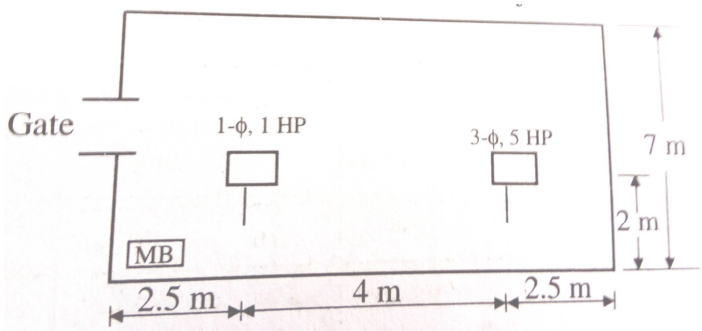
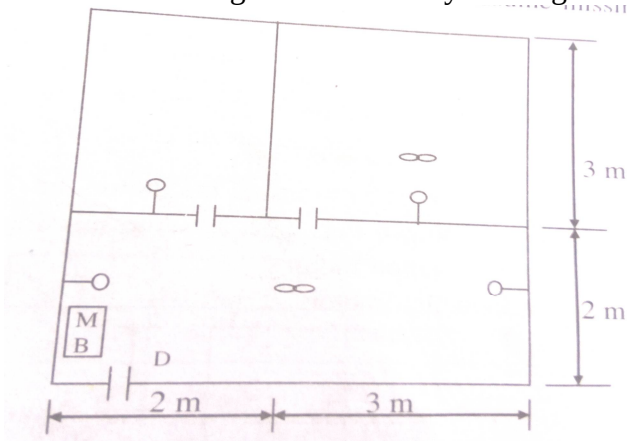
UNIT-II

1	Discuss the various types of wiring accessories used in electrical wiring system	**[10M]**
2	With relevant diagrams, explain in detail about various types of fuses used in electrical wiring system.	**[10M]**
3	Discuss the various types of wiring accessories used in electrical wiring system	**[10M]**
4	With relevant diagrams, explain in detail about various types of fuses used in electrical wiring system.	**[10M]**
5	Write short notes on (a) Battern wiring	**[5M]**
	(b) PVC conduit wiring system	**[5M]**
6	What do you mean by MCB? List out the different types of MCBs used in electrical wiring system. How is it used for protection against over load and short circuit faults?	**[10M]**

7	Explain the following electrical wiring system with necessary diagrams. (a) CTS wiring and	**[5M]**
	(b) Concealed wiring	**[5M]**
8	Discuss the various types of wiring accessories used in electrical wiring system	**[10M]**
9	Define the following terms used in illumination engineering (a) Plane angle	**[2M]**
	(b) Solid angle	**[2M]**
	(c) Luminous flux	**[2M]**
	(d) Luminous Intensity	**[2M]**
	(e) Illumination	**[2M]**
10	State and explain the Laws of Illumination	**[10M]**

UNIT-III

1	Discuss in detail about the Indian electricity rules to be considered for domestic wiring system.	**[10M]**
2	Describe the general calculations to be made for domestic wiring installations.	**[10M]**
3	What are the various points to be considered for testing and inspection of electrical domestic wiring system? Explain	**[10M]**
4	Explain how can you estimate the installation cost of electrical wiring system?	**[10M]**
5	What are the steps to be followed for estimation of power load installations? Explain in detail.	**[10M]**
6	Discuss the important general points to be considered for power load wiring installations.	**[10M]**
7	The plan of a residential building is shown in figure. It is to be provided with PVC system of wiring. Estimate the no. of sub circuits required. Also estimate the size of the cables, main switch and distribution box. Assume any missing data.  	**[10M]**

8	A 7 HP, 400V, 3-phase, 50 Hz induction motor is to be installed in a flour mill as shown in figure. Estimate the quantity of materials required. Show the layout of wiring diagram and assume any missing data.  	**[10M]**
9	A 3-phase 5 HP, 400V and a 1-phase 1 HP, 230V induction motors are installed in a workshop of plan shown in figure. Make a neat single line sketch of power wiring of the machines. Estimate the size and length of conduit and cable. Assume any missing data.  	**[10M]**
10	Draw the wiring diagram and estimate the quantity of material for surface conduit wiring system in a house shown in figure. Assume any missing data if any.  	**[10M]**

MECHANICAL TECHNOLOGY
UNIT-IV

1	Differentiate 2 stroke and 4 stroke engine.	**[10M]**
2	What are the various classifications of air compressors . Explain Centrifugal and Axial flow compressor with neat sketch	**[10M]**
3	What are the main parts in simple vapor compressor refrigeration system? Explain their function.	**[10M]**
4	Explain working of summer air conditioning system with neat sketch.	**[10M]**
5	Explain working of winter air conditioning system with neat sketch.	**[10M]**
6	Explain Window AC and Split AC with neat sketch.	**[10M]**
7	Explain Central Packaged Air Conditioner with neat sketch.	**[10M]**
8	Explain reciprocating compressor with neat sketch.	**[10M]**
9	Explain Rotary compressors with neat sketch.	**[10M]**
10	Explain Ducting.What are the requirements of ducting and what are the various classifications of ducting.	**[10M]**

UNIT-V

1	What are the various methods of transmitting mechanical power.	**[10M]**
2	What are the types of flat belt drives? Explain about open belt and cross belt drives?	**[10M]**
3	Explain the rope drive, chain drive and gear drive with neat sketch	**[10M]**
4	Explain Quarter turn belt drive and belt drive with idler pulley with neat sketch.	**[10M]**
5	Explain stepped and cone pulley drive with neat sketch.	**[10M]**
6	Explain Fast and loose pulley drive with neat sketch.	**[10M]**
7	Explain Belt and bucket conveyers & Power shovel with neat sketch.	**[10M]**
8	Explain Concrete mixture and Bulldozer with neat sketch.	**[10M]**
9	Explain Conveyers and Excavators with neat sketch.	**[10M]**

10	Explain some of the Mechanical handling equipments with neat sketch.	**[10M]**

UNIT-VI

1	(a) What is welding? What are the types of welding process?	**[5M]**
	(b) What are the applications of welding?	**[5M]**
2	Explain working of Oxy- Acetylene Welding process with neat sketch.	**[10M]**
3	Explain working of Manual arc Welding process with neat sketch.	**[10M]**
4	Explain working of Submerged arc Welding process with neat sketch.	**[10M]**
5	What is TIG welding? Explain working of TIG Welding process with neat sketch.	**[10M]**
6	What is MIG welding? Explain working of MIG Welding process with neat sketch.	**[10M]**
7	Differentiate between Gas welding and Arc welding	**[10M]**
8	Differentiate between TIG and MIG welding	**[10M]**
9	Differentiate between Soldering , Brazing and Welding.	**[10M]**
10	Explain the following: (a) What is Soldering?	**[2M]**
	(b) What is Brazing?	**[2M]**
	(c) What are the Equipments used in Oxy- Acetylene welding	**[2M]**
	(d) What is welding?	**[2M]**
	(e) What are the main applications of welding process?	**[2M]**