BE – sem-VIII – old – Electrical – DMAES

QP Code: 627301 12/5/16

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. 1 is **Compulsory**.
(2) Solve any **Four** Questions out of remaining.
(3) Assume the suitable **data** if **required** and specify the same.

1. Solve the following questions. **20**
   (a) Define the simple pay back period
   (b) Define the term future estimate
   (c) Discuss the term Benchmarking
   (d) What are features of green building

2. (a) What is energy audit. What are different energy audit instruments? **10**
   (b) Discuss the fuel substitution. **10**

3. (a) Discuss the energy auditing of HVAC. **10**
   (b) Discuss the role of SCAD A in energy management system. **10**

4. (a) Discuss the role of Electricity Bill as energy optimization tool. **10**
   (b) Discuss the performance assessment of power factor improvement capacitor. **10**

5. (a) Discuss role of electronic ballast and occupancy sensor as energy efficient technology. **10**
   (b) Discuss the different types of distribution systems and their selection criterion. **10**

6. (a) Discuss ant two electrical drawing/plans in detail. **10**
   (b) Discuss the cable management system. **10**

7. (a) Design the illumination system for a library with size (20L*12B*3.5H) in meter. Draw the lighting layout and justify the various assumptions. **10**
   (b) Discus the economical and non economical aspects of energy conservations. **10**

[Turn Over

Data for Illumination Design problems

Coefficient of Utilization Chart

K	Rc=0.7			Rc=0.5			Rc=0.3		
	Rw=0.5	Rw=0.3	Rw=0.1	Rw=0.5	Rw=0.3	Rw=0.1	Rw=0.5	Rw=0.3	Rw=0.1
0	0	0	0	0	0	0	0	0	0
0.6	0.43	0.39	0.36	0.42	0.38	0.36	0.41	0.38	0.36
0.8	0.45	0.41	0.38	0.44	0.40	0.38	0.43	0.40	0.38
1.00	0.51	0.47	0.44	0.55	0.47	0.44	0.49	0.46	0.46
1.25	0.55	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48
1.50	0.57	0.54	0.52	0.56	0.53	0.51	0.54	0.52	0.50
2.00	0.61	0.58	0.56	0.59	0.57	0.55	0.57	0.56	0.54
2.50	0.63	0.61	0.59	0.61	0.59	0.57	0.59	0.58	0.56
3.00	0.65	0.63	0.61	0.63	0.61	0.59	0.61	0.59	0.58
4.00	0.67	0.65	0.63	0.64	0.63	0.62	0.62	0.61	0.59
5.00	0.68	0.67	0.65	0.65	0.64	0.63	0.63	0.62	0.61

Lamp Data

Sr.No	Type of Lamp	Wattage	Lumen output
1	GLS	25	230
		40	415
		60	710
		100	1340
		200	3000
2	Tungsten Halogen	50 (Miniature Dichroic)	900
		300	5100
		500	9000
		1000	22000
3	Fluorescent (T8/ T5)	18 (Halo phosphate)	1015
		36(Halo phosphate)	2450
		18 (82/84/86)	1300
		36(82/84/86)	3250
		28(T5)	2800
4	CFL	9	600
		11	760
		13	920
		18	1200