

SUBJECT CODE NO:- P-448
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EEP/EE/EEE) Examination MAY/JUNE-2016
Electrical System Planning & Design [Elective-II]
(Revised)

[Time: Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

- N.B
- i) Answer to the two sections must be written in same answer books.
 - ii) Question No. 1 and Question No. 6 are compulsory.
 - iii) Attempt any two questions from remaining questions of each section.

Section A

- | | | |
|-----|--|----------------|
| Q.1 | Solve <u>any five</u> questions. | 10 |
| | <ol style="list-style-type: none"> i. Define the following <ol style="list-style-type: none"> a) Schematic diagram and b) Wiring diagram ii. List out the important points while drawing a schematic diagram. iii. What are the standard sizes of switch boards? iv. Give the difference between Neutral and Earth wire. v. Enlist the points to be considered for installations of fittings. vi. Enlist the points to be considered for estimating and costing of electrical installation. vii. Define the terms <ol style="list-style-type: none"> 1) Luminous intensity 2) Luminous fluid viii. What are the main types of light sources? | |
| Q.2 | <ol style="list-style-type: none"> a) Explain electrical diagrams according to their system of representing. b) 3 light points each with one way switch are to be wired. Switches are to be provided in different places. Draw the following <ol style="list-style-type: none"> a) Schematic diagram b) Wiring diagram in looping in system c) Single line diagram for b d) Wiring diagram in joint box system | 07
08 |
| Q.3 | <ol style="list-style-type: none"> a) Explain the general requirements of electrical installations. b) Write a short note on protective devices present in electrical system. | 08
07 |
| Q.4 | <ol style="list-style-type: none"> a) Explain with aid of a circuit diagram the operation of a sodium vapor lamp. b) An illumination of 50 lux is to be produced on the floor of a room 12 m × 9 m. 36 lamps are required to produce this illumination in the room, if 50% of emitted light falls on the floor. What is the power of the lamp in candela? | 07
08 |
| Q.5 | Write short note on <ol style="list-style-type: none"> a) Laws of illumination b) Design considerations of electrical installation in small industries c) State the meaning of following terms <ol style="list-style-type: none"> i) Maintenance factor ii) Coefficient of utilizations | 06
05
04 |

Section B

Q.6	Answer <u>any five</u> questions.	10
	i. List out the types of substations.	
	ii. Give the details of HT and LT metering	
	iii. How to calculate the labor cost for the electrical installations?	
	iv. What is PFC and APFC?	
	v. Define jogging in motor? Give one application of it.	
	vi. Define relay and overload relay.	
	vii. List out the motor control methods for starting and stopping.	
	viii. What do you mean by limit and float switches?	
Q.7	a) Estimate the quantity of material required for the erection of a 200 KVA pole mounting substations.	08
	b) An outdoor pole mounted 11 KV / 415 V substation has to be installed for supply to a residential area having a load of 63 KVA. Estimate the quantity of material required.	07
Q.8	a) Write a short note on sub circuits.	08
	b) Explain estimating and costing of electrical installations.	07
Q.9	a) Explain in brief for overload relays, push buttons, contractors and fuses for motor control circuits.	07
	b) List out the starting methods of 3- ϕ squirrel cage induction motor and explain any one of them.	08
Q.10	Write a short note on	
	i. Use of push button for both starting and stopping of 3 ϕ Induction motor.	05
	ii. Auxiliary contact interlocking	06
	iii. Motor protection	04