DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

Winter Semester Examination (Supplementary) – Nov. - 2019

Branch: Electrical Engineering **Sem.:- III**
Subject: - Electrical Installation & Estimation (BTEEC403) **Marks: 60**
Date: - 30/11/2019 **Time: - 3 Hr.**

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

(Marks)

Q.1. a) What are the points to be consider while selecting size of conductor? **(06)**

b) Describe purchase system and objective of purchase? **(06)**

Q.2. a) What are the points to be consider while preparing the estimate **(04)**

b) The plan of drawing hall showing the position of electrical point is given in figure. Estimate the quantity of material required for concealed conduit wiring when 230V, 50 Hz A.C supply is available. Assume the height of ceiling to be 4m also draw a circuit diagram and wiring plan indicating the position of distribution board. **(08)**

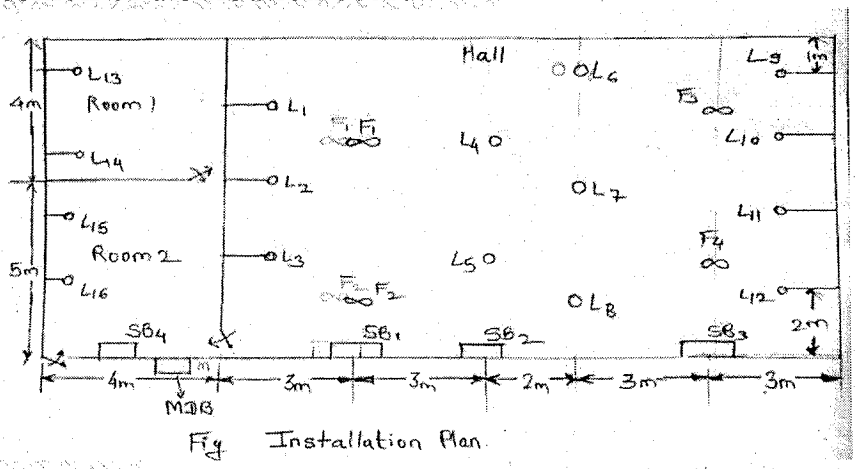

Fig Installation Plan

Q.3. a) A room is to be wired for single phase A.C. supply directly taken from mains which declared voltage of 200V.The length of wire from the main switch to light and plug point is 30m.If the wire is to carry 5A, determine the size of the conductor. (Data table are given on last page) (06)

b) Explain centralized purchase and decentralized purchase in detail? (06)

Q.4. a) Explain Married joint and a tape joint? (06)

b) Explain properties of different conductor used in different application? (06)

Q.5. a) Describe different tools used in electrical wiring system? (06)

b) Write down brief specification for followings: (06)
i) AC Energy meter for domestic use.
ii) Main switch
iii) Tumbler switch

Q.6. a) Write a short note on cleat wiring system (06)

b) Explain Indian Electricity Rules: (06)
i) IE Rules 58.
ii) IE Rules 77.
ii) IE Rules 79.

Current ratings and voltage drop for vulcanised rubber PVC or polythene insulated or tough Rubber PVC lead sheathed single core aluminium wires or cables

Size of Conductor		*2 Cables d.c. or Single-phase a.c.*		*3 or 4 cables of balanced 3-phase*		*4 Cables d.c.*	
Normal area sq. mm.	*Number and diameter of wire in mm.*	*Current rating in amperes*	*Approx. length of run for volt drop in metres*	*Current rating in amperes*	*Approxi. length of run for 1 volt drop in metres*	*Current rating in amperes*	*Approx. length of run for 1 volt drop in metres*
1.5	1/1.40	10	2.3	9	2.9	9	2.5
2.5	1/1.80	15	2.5	12	3.6	11	3.4
4.0	1/2.24	20	2.9	17	3.9	15	4.1
6.0	1/2.80	27	3.4	24	4.3	21	4.3
10.0	1/3.55	34	4.3	31	5.4	27	5.4

Data Table: for Q.3a)