

Hall Ticket Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Code No. : 13108 EIS

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (CBCS) III-Semester Supplementary Examinations, May/June-2018

Electrical Installation and Safety

Time: 3 hours

Max. Marks: 70

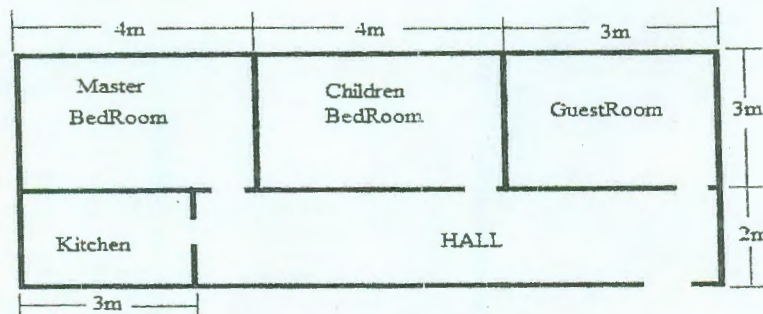
Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. What is a Duct Tube?
2. List the types of wiring systems.
3. What are the safe work practices?
4. How much is the resistance of Dry skin and Wet skin of a Human body?
5. What do you understand by space-height ratio?
6. What is meant by stroboscopic effect?
7. What is the maximum load and number of points that can be connected in a lighting sub-circuit?
8. Calculate the load current of 287.52KW power load.
9. Which type of starter will you suggest for 12KW Induction motor?
10. Why earthing is necessary for motor installation?

Part-B (5 × 10 = 50 Marks)

11. a) Which type of wiring is very popular, why? Explain in detail. [3]
b) List the types of wires used in wiring and explain them with neat sketches. [7]
12. a) Why fuse is used in an Electrical installation and list different types of fuses? [4]
b) How do you decide the rating a MCB and when do you use MCB & MCCB? [6]
13. a) A conference hall of 15m X 6m X 4.5m height is to be fitted with fan and light points. The illumination required is 10W/m² and the numbers of fans are four of 60W each. Calculate the number of lamps with wattage. Draw i) Schematic arrangement of lamps and fans. ii) Wiring plan showing the sub-circuits. iii) Electrical circuit wiring diagram of one of the sub-circuit from meter board. [7]
b) How do you overcome the Glare? [3]
14. a) [7]



For the above house plan prepare the design brief report only for the Lighting loads. Assume 3-Phase supply and balance the 3-phases.

- b) How do you differentiate Maximum demand and Connected load? [3]

Contd...2

- 15. a) A small workshop of 15m X 30m has to be equipped with 5HP, 3HP & 1HP, 3-ph, 415V, 50Hz motors. Determine the rating of main fuse switch, each motor control switch, Cable sizes from meter board to the each motor terminal and draw i) a floor plan of placing these machines. ii) Electrical circuit wiring diagram. [7]
- b) Differentiate DOL starter and star-delta starter. [3]
- 16. a) Explain about VIR cable with neat sketch and give its advantages & disadvantages. [5]
- b) What are the common causes of electrocution and levels of effect of current on human body? [5]
- 17. Answer any *two* of the following:
 - a) A hall of 36m X 20m is to be illuminated so as to provide with 35 Lux at working plane. The Utilization factor = 0.5, Depreciation factor = 1.3 & space-height ratio = 1.3. Calculate the number of lamps, wattage of each lamp and Draw Schematic arrangement of lamps. [5]
 - b) If the Connected load of an Office building is 14.5KW, Calculate the size of Service Power Cable require? [5]
 - c) 3-ph, 415V, 50Hz, 10HP and 5HP squirrel cage motors are to be installed in a workshop of 9m X 6m. Determine the rating of main fuse switch, each motor control switch, Cable sizes from meter board to the each motor terminal. [5]

§§§§§

