S.B. Roll No.....

ELECTRICAL ENGINEERING DESIGN AND DRAWING
3rd Exam/Elect/0527/May'18

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Draw the graphical symbol of the following. **15x1=15**

a. Rewritable Fuse
b. Earth point
c. Two pole switch
d. Energy meter
e. Wattmeter
f. A.C generator
g. Push button Normally Open
h. Three phase induction motor
i. Circuit Breaker]
j. Neutral Link
k. Ammeter
l. Voltmeter
m. Surface conduit Wiring
n. Siren
o. Ceiling Fan

SECTION-B

Q2. Attempt any three questions. **3x20=60**

i. Draw the complete wiring diagram of a modern large building showing connections of main panel board consisting of double pole MCB, single pole MCBs and ELCB. The building has 4 light and fan points, one 5 ampere socket and one 15amp socket. The building has also an alternate source of supply of generator. Show the connections of generator also with the supply through double pole, double throw, and change over switch. Also show the connections of ammeter and voltmeter.

ii. Design the control panel board which is meant for supplying power to four 3phase motors. The power should commence to the motors through a 3 phase energy meter and the change over switch. There is also generator supply which is used to drive the motors in case of supply failure. The panel board should consist of one triple pole MCB unit of 63amp rating, 4 triple pole MCB, energy meter and two triple poles; with HRC fuses built main switches etc.

iii. Two motors are to be started in sequence in such a way that when first motor is started only then the second motor can be started. The second motor will start only, when the first motor is running. The second motor can be stopped alone. But when first motor is stopped, both the motors should stop. Design the circuit and then draw the schematic diagram and wiring diagram.

iv. Design and draw the wiring diagram of the main panel board of a moderate building consisting of single phase energy meter, double pole main switch, generator supply, DPIC main switch for generator supply, double pole, double throw main switch, two pole MCB units, ELCB and nine sub circuits, bus bar and neutral link etc.

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v. The isometric view of pin type insulator is shown in fig. Draw
   a. Front view with pin showing the insulator right half in section.
   b. Top View.
   Draw of assembly view.