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C14-EE-404

**4464**

**BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH /APRIL-2019  
DEEE - FOURTH SEMESTER EXAMINATION  
ELECTRICAL INSTALLATION & ESTIMATION**

Time: 3 Hours]

[Max. Marks: 80

**PART-A**

**10x3=30M**

**Instructions:** 1) Answer **all** questions. Each question carries **three** marks.  
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State the uses of standard wire guage
2. Write the full names of the following
  - a) DPDT
  - b) PVC
  - c) TRS
3. Write the factors to be considered while selecting the fuse element?
4. Find the conductor size for installation of 5HP,415V, 3 $\phi$ , 50Hz, Induction motor whose efficiency is 92%?
- \* 5. Write any four general Indian electrical rules while preparing internal wiring estimation?
6. What are the steps to estimate internal wiring installation?
7. State the main components of OH distribution line and mention their functions?
8. What is the purpose of earthing?
9. Name the various tests to be conducted before giving supply to a small scale industry?
10. State any three IE rules for industrial safety?

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## PART-B

10x5=50M

**Instructions:** 1) Answer any **five** questions. Each question carries **ten** marks.  
2) Answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.  
3) Assume missing data if any

11. What are the various types of electrical wiring system? Explain about any one type 3M+7M
12. An irrigation surface type pump set of 7.5 kW is to be installed at a distance of 15 m from a 3-phase, 415 V distribution line.
- a) List the material required for the service main.
  - b) Design the specification of the service main.
  - c) Draw the wiring diagram from distribution pole to the motor pump set.
  - d) Design the specification of the materials required to make the wiring installation. 4x2½M
13. Estimate the quantity of material required for two rooms of size 6m x 5m x 3.5m as shown in below fig(a) which are to be wired from 1-phase supply with a provision for 2 lamps (60 W) one fan (80 W) two 5 A sockets (100 W) and 1 power socket 15A (1000W).

Draw the installation plan for CTS system. Assume missing data if any.



Fig (1)

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14. Draw the wiring layout and prepare the estimate for Metal surface conduit system of wiring for a work shop/electrical laboratory of size 16M x 5M x3.5M as shown in below fig.



Fig (2)

15. Estimate the material required for a pipe earthing with neat sketch.
16. Estimate the material required for a plinth mounted sub station with the help of a neat sketch.
17. Calculate the number of various insulators needed for the erection of 1000 m, 3-phase, 11 kV over head line with 2 angle points and two turning points. Assume the span as 70 meters.
18. With the help of neat sketch explain about any four tests to be conducted before energizing the new electrical installation.

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