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**4746**

**BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH/APRIL-2019  
DEEE - SXITH SEMESTER EXAMINATION**

**INDUSTRIAL AUTOMATION**

Time:3 Hours

Max.Marks:80

**PART-A****10x3=30M**

**Instructions:** 1) Answer **all** questions. Each question carries **3** marks.  
2) Answer should be brief and straight to the point and shall not exceed **five** simple sentences.

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| 1) Define control system.  | 3M |
| 2) Draw a generalized block diagram and label the parts of feedback control system.  | 3M |
| 3) Explain the photo electric switch.  | 3M |
| 4) List the specifications of potentiometer.   | 3M |
| 5) What are the types of a controller?   | 3M |
| * 6) Define Transfer Function of a system.   | 3M |
| 7) Explain the block diagram reduction rules for cascade blocks and parallel blocks. | 3M |
| 8) What is a proportional controller?  | 3M |
| 9) List the advantages of PLC.   | 3M |
| 10) Draw the basic elements of ladder diagram and label parts.                       | 3M |

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## PART-B

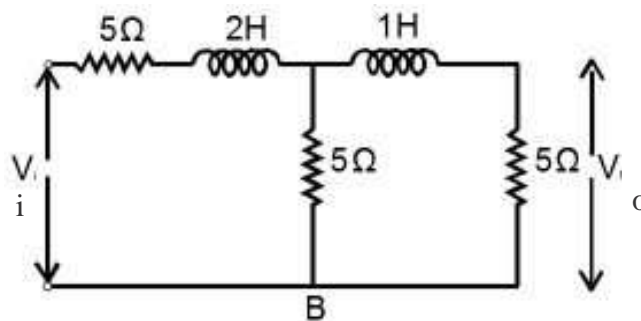
**5x10=50M**

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**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.

- 11) a) Write differences between open loop and closed loop system. 5M  
b) Explain temperature control of a room with neat diagram. 5M
- 12) a) List the applications of reed relay and pilot lamps. 6M  
b) Explain the types of contacts. 4M
- 13) Explain the synchros as error detector with a neat diagram. 10M
- 14) a) Explain the concept of digital controller. 5M  
b) Write differences between hydraulic and pneumatic controllers. 5M
- 15) a) List the properties and limitations of a transfer function. 4M  
b) Explain PI and PID controllers. 6M
- 16) Derive the transfer function for the following electrical network. 10M



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- 17) Draw and explain ladder diagram for star delata starter. 10M
- 18) a) Explain Counter (CTU, CTD) instructions. 6M  
b) Explain logical AND and logical OR instructions using ladder diagrams. 4M

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