**B. Tech. Sem - III (Production Engg.) (2014 COURSE) (CBCS) : WINTER - 2018**

**SUBJECT: BASIC ELECTRONICS AND COMMUNICATION ENGINEERING**

Day: Monday
Date: 26/11/2018

**W-2018-2316**

Time: 10.00 AM TO 01.00 PM
Max Marks: 60

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**N.B.:**

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagrams **WHEREVER** necessary.
4) Use of non-programmable **CALCULATOR** is allowed.

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| **Q. 1** | **a)** | Write in brief on tunnel diode. | **(05)** |
| | **b)** | Write in brief on transistors. | **(05)** |
| | | **OR** | |
| | **a)** | Draw and explain V-I characteristics of PN junction Diode. | **(05)** |
| | **b)** | Write in brief on capacitors and their types. | **(05)** |
| **Q.2** | **a)** | What are the operating modes in SCR? | **(05)** |
| | **b)** | Compare LED and LCD. | **(05)** |
| | | **OR** | |
| | **a)** | Draw and explain block diagram of OP-AMP. | **(05)** |
| | **b)** | Write in brief on full wave bridge rectifier. | **(05)** |
| **Q.3** | **a)** | What is hexadecimal number system? | **(05)** |
| | **b)** | Divide $(110101)_2$ by $(101)_2$ and multiply $(110101)_2$ by $(111)_2$ using basic rules of binary Division and multiplication. | **(05)** |
| | | **OR** | |
| | **a)** | Compare combinational and sequential circuits. | **(05)** |
| | **b)** | Draw the three input truth table of AND, OR, NAND and NOR gates. | **(05)** |
| **Q.4** | **a)** | What is modulation and what is purpose of it? | **(05)** |
| | **b)** | Write in brief on FM. | **(05)** |
| | | **OR** | |
| | **a)** | Draw the block diagram of analog communication system. | **(05)** |
| | **b)** | Compare AM & PM. | **(05)** |
| **Q.5** | | With the help of block diagram explain digital communication system. | **(10)** |
| | | **OR** | |
| | **a)** | What are the methods of sampling? | **(05)** |
| | **b)** | Compare delta modulation and pulse code modulation. | **(05)** |
| **Q.6** | **a)** | What are the types of flags in 8085 microprocessor? | **(05)** |
| | **b)** | Compare microprocessor and microcontroller. | **(05)** |
| | | **OR** | |
| | | Draw and explain architecture of 8085 microprocessor. | **(10)** |

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