



Reg. No. :

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**Question Paper Code : 41182**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Second Semester

Mechanical Engineering

GE 6252 – BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Mechanical Engineering (Sandwich)/Aeronautical Engineering/  
Agriculture Engineering/Automobile Engineering/Civil Engineering/Environmental  
Engineering/Geoinformatics Engineering/Industrial Engineering/Industrial  
Engineering and Management/Manufacturing Engineering/Marine Engineering/  
Materials Science and Engineering/Mechanical and Automation Engineering/  
Mechatronics Engineering/Petrochemical Engineering/Production Engineering/  
Robotics and Automation Engineering/Chemical Engineering/Chemical and  
Electrochemical Engineering/Fashion Technology/Food technology/Handloom and  
Textile Technology/Petrochemical technology/Petroleum Engineering/Plastic  
Technology/Polymer Technology/Textile Chemistry/Textile Technology/Textile  
Technology (Fashion Technology)  
(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. State Kirchoff's laws.
2. What are the two types of Moving Iron instruments ?
3. What are the different types of DC motor ?
4. What is meant by transformer ?
5. Define breakdown voltage in a Zener diode.
6. What are the different configuration of BJT ?

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7. What is half adder ?
8. What is a register ?
9. What are the types of modulation ?
10. What are the basic modes of radio wave propagation ?

PART - B

(5×16=80 Marks)

11. a) i) The effective resistance of two resistors connected in series is  $100 \Omega$ . When connected in parallel the effective value is  $24 \Omega$ . Determine the values of the two resistors. (8)  
ii) What is power factor ? What are the three types of power in AC circuits. (8)  
(OR)
- b) Explain the working and advantages of Permanent Magnet moving Coil instrument.
12. a) Discuss in detail about the constructional details of DC Machine.  
(OR)
- b) Discuss the types of single phase Induction motor ? How to make the single phase Induction motor self-starting ?
13. a) Draw the circuit diagram of bridge rectifier and explain the output characteristics.  
(OR)
- b) Describe the Common Emitter Configuration of NPN transistor.
14. a) What is a counter ? Explain briefly about synchronous counter and uses.  
(OR)
- b) Describe the half adder and full adder with the truth table and logic circuits.
15. a) Discuss in detail about Optical fiber and advantages.  
(OR)
- b) Explain the Satellite communication system in detail.