

G 601

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

First and Second Semesters

EN 010 109—BASIC ELECTRONICS ENGINEERING AND INFORMATION TECHNOLOGY

(New Scheme—2010 admission onwards—Regular/Improvement/Supplementary)

[Common for all branches]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Write any *three* properties of Op-amp and give their values for ideal and practical op-amp.
2. Clearly explain the concept of frequency reuse.
3. Give the working principle and applications of a thermistor.
4. What is Von Neumann architecture ? Where it is used ?
5. What is IP address ? Give an example.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Draw a non-inverting operational amplifier circuit and design it for a voltage gain of 12.
7. What is a transponder ? Explain its working.
8. With a neat constructional diagram, explain the working principle of a loud speaker.
9. What is virtual memory ? How it is made use of in improving the performance of a computer ?
10. Distinguish between procedural programming and object oriented programming, with the help of appropriate examples.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. With a neat circuit diagram, explain how a Zener shunt regulator can maintain voltage regulation against variations in input voltage and variations in load current.

Or

Turn over

12. What are the three configurations of a BJT ? Compare their four properties. Sketch and explain the input and output characteristics of any one configuration.
13. Define AM. Explain with neat sketches. Derive expression for the AM wave, modulated by $v_m = V_m \sin \omega_m t$. Sketch its frequency spectrum.

Or

14. With a neat block diagram, describe the different types of satellite communication systems. Explain the functions of each component in it.
15. Explain the interlaced scanning used in TV. Draw the block diagram of PAL colour TV receiver and explain the function of each component.

Or

16. With neat diagrams, explain the working principles of (i) LVDT ; (ii) Photodiode ; (iii) 5.1 channel audio system.
17. Explain clearly the functions of CPU. What are the essential functions in it ? Describe single bus and multibus architecture.

Or

18. (a) Distinguish between primary and secondary memories with the help of examples. (3 marks)
(b) Explain the principles of the three types of printers used in computer. (9 marks)
19. Describe the method of preparing a computer program using (i) procedural oriented language ; (ii) object oriented language. Give suitable example.

Or

20. Explain the architecture of the internet. Discuss any one protocol used in the internet.

[5 × 12 = 60 marks]