

F 6896

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Third Semester

Electrical and Electronics Engineering

EE 010 304—ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS [EE]

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Define Dead Time and Dead Zone.
2. What is Volt-Ratio Box ?
3. List out the methods of measurement of low resistance.
4. List out the applications of current transformer.
5. Draw the block diagram of digital storage oscilloscope.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Discuss in detail about the shunts and multipliers.
7. Briefly explain about the Schering Bridge.
8. Discuss in detail about the errors and compensation of single phase energy meter.
9. Obtain the expression for ratio and phase angle error in potential transformer.
10. Briefly discuss about multichannel oscilloscope.

(5 × 5 = 25 marks)

Turn over

Part C

*Answer all questions.
Each question carries 12 marks.*

11. Write short notes on :

- (a) Electrostatic meters. (4 marks)
- (b) Moving coil instrument. (4 marks)
- (c) Essential of indicating instruments. (4 marks)

Or

12. (a) Discuss in detail about the operation and construction of moving iron instruments. (8 marks)
- (b) Write short notes of Electrodynamometer Ammeter. (4 marks)

13. Discuss in detail about the ac potentiometer and its applications.

Or

14. Discuss about the operation of :

- (a) Kelvin's double bridge. (6 marks)
- (b) Maxwell's Bridge. (6 marks)

15. Briefly explain the methods of measurement of high resistance.

Or

16. (a) Discuss in detail about the construction of three phase Energy meter. (6 marks)
- (b) Write short notes on powerfactor meter. (6 marks)
17. (a) Discuss in detail about the operation of current transformer. (9 marks)
- (b) Write short notes on measurement of speed. (3 marks)

Or

18. Explain in detail about the calibration of Ammeters, voltmeters and wattmeters.

19. Explain about the basic d.c. voltmeter and a.c. voltmeter using rectifiers.

Or

20. Discuss in detail about the permeability measurements.

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Third Semester

Branch : Electrical and Electronics Engineering

EE 010 305—ELECTRONIC CIRCUITS [EE]

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is d.c. silent point ? Why is it called so ?
2. Enumerate the parameters of cascade amplifiers. Define them.
3. What is the difference between power amplifier and voltage amplifier ? Explain.
4. State Barkhausen criterion for oscillators.
5. Why UJTs are called as double based diodes ? Explain.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Mention the methods of biasing JFET. Explain any one with a diagram.
7. Derive an expression for over all gain of a multistage amplifier.
8. Which type of tuning is suitable to enhance bandwidth in tuned amplifiers ? Explain.
9. Differentiate LC from RC oscillators with examples.
10. Explain any two applications of Bootstrap circuits.

(5 × 5 = 25 marks)

Turn over

Part C

*Answer any one question from each module.
Each full question carries 12 marks.*

MODULE 1

11. What is d.c. restorer? Explain with a diagram. Explain the types of d.c. restorers with neat diagrams.

Or

12. Differentiate JFET from MOSFET. Explain the construction and operating principle of JFET. Derive its V_p .

MODULE 2

13. Draw the h parameter equivalent circuit of CC BJT amplifier and explain it. Derive expressions for Z_i , Z_o , A_i and A_v .

Or

14. Draw a neat diagram of RC coupled amplifier and explain its frequency response in detail.

MODULE 3

15. Draw class B push-pull amplifier and explain its operating principle. Derive its efficiency.

Or

16. Draw a BJT class A power amplifier and explain it. Derive its efficiency.

MODULE 4

17. (a) Discuss the four basic types of feedback topologies with diagrams.

(b) Draw RC phase-shift oscillator and explain its concept.

Or

18. Draw a neat diagram of crystal oscillator and explain its construction and operating principle in detail.

MODULE 5

19. Draw a neat schematic of bistable multivibrator and explain it in detail.

Or

20. Draw zener shunt regulator and transistor series regulator. Explain them. Bring out their design details.

(5 × 12 = 60 marks)