

NRT/KS/19/2094

Bachelor of Science (B.Sc.) Semester—III Examination

ELECTRONICS (Electronic Circuit Design)

Optional Paper—II

Time : Three Hours]

[Maximum Marks : 50

Note :—All questions are compulsory and carry equal marks.

EITHER

1. (A) Give a brief outline of various steps involved in design and development of an electronic system. 10

OR

- (B) Differentiate between design approaches for new design and redesign of an electronic system with suitable examples.
- (C) Write a note on techno-commercial feasibility of any system design. 6+4

EITHER

2. (A) Explain steps involved in design and analysis of a parallel resonant circuit using simulation tools. 10

OR

- (B) Enlist and explain function buttons on tool bar.
- (C) Explain with example mix signal simulation. 5+5

EITHER

3. (A) Explain the working of IC 555 as monostable multivibrator with the help of its block schematic.
- (B) Explain the use of IC 555 as FSK Oscillator. 7+3

OR

- (C) Explain the use of IC 555 as symmetric and asymmetric astable multivibrator.
- (D) Explain the use of IC 555 as pulse position modulator PPM. 5+5

EITHER

4. (A) Draw the block diagram of a function generator and explain in brief the role of each block.
- (B) Explain measurement of phase using Lissajous figures on CRO. 7+3

OR

- (C) What is a dual trace CRO ? Explain its advantages. Draw the block diagram of dual trace CRO and explain its working. 10

5. Solve any **10** :—

- (1) What is a white box concept in electronic system design process ?
- (2) How does ergonomics affect designed systems ?
- (3) What do you understand by screening of ideas for system design and development ?
- (4) How a dc battery is inserted in workspace of circuit maker ?
- (5) Expand the term SPICE used in circuit maker.
- (6) What does the term Tick refer to in circuit maker ?
- (7) What is duty cycle ?
- (8) Draw the circuit for FSK using IC 555.
- (9) Draw the circuit for PAM using IC 555.
- (10) State the operational modes for dual trace CRO.
- (11) How can CRO be used for frequency measurement ?
- (12) How AC Voltages are measured using CRO ?

1×10