BBH-003-001603 Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

July – 2021

Physics : Paper-603

(Solid State Electronics)

(Old Course)

Faculty Code : 003
Subject Code : 001603

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions :

(1) Attempt all questions.

(2) Figures to the right indicate marks.

(3) Notations have their usual meaning.

1 Fill in the blank with proper answer : **20**

(1) Bistable multivibrator is also known as _____.

(2) A circuit that can ON and OFF power to an electrical circuit is known as _____ circuit.

(3) The multivibrator which generates square wave of its own is known as _____.

(4) Full form of SCR is _____.

(5) An SCR has _____ pn junctions.

(6) A DIAC has _____ terminals.

(7) Full form of LDR is _____.

(8) The LDR responds to _____.

(9) A thyristor can be used as a _____.

(10) The ideal open lop gain of an Op-Amp is _____.

(11) In small scale integration, component density is _____.

(12) The band width of an ideal Op-Amp is _____.

(13) LVDT has one primary but _____ secondary coils.

(14) Microphone is an _____ transducer.

(15) A _____ is a most widely sensor used to measure the temperature.

(16) Flip-flop can be used as a _____ device in computer.

(17) _____ Flip-flop has only one input.

(18) A circuit with many inputs but one output is called _____.

(19) A circuit with only one input but many outputs is called _____.

(20) When the rectangular wave is applied at the input to an integrating circuit, the output wave will be a _____ wave.

2 (a) Answer any **three** : **6**

(1) Define multivibrator and explain its working principle.

(2) Define electro-mechanical switch and write its advantages.

(3) Write the applications of clipping circuits.

(4) What is thyristor ?

(5) Explain firing angle.

(6) Explain voltage triggering of thyristor.

(b) Answer any **three** : **9**

(1) Explain differentiating circuit.

(2) Explain how transistor works as switch.

(3) Explain two transistor analogy of SCR.

(4) Write applications of thyristors.

(5) Write a note on DIAC.

(6) Draw only circuit diagram of temperature control circuit.

(c) Answer any two in detail : **10**

(1) Explain working of monostable multivibrator with neat circuit diagram.

(2) What is clipper circuit ? Explain the working of negative clipper with and without bias applied.

(3) Explain construction, working and characteristic of an SCR.

(4) Write a note on TRIAC.

(5) Explain illumination control circuit using DIAC and TRIAC.

3 (a) Answer any **three** : **6**

(1) What is an IC ?

(2) Define CMRR and explain its importance.

(3) What is transducer ?

(4) Write the advantages of LVDT.

(5) Explain sequential circuit.

(6) Write the applications of multiplexer.

(b) Answer any three : **9**

(1) Write the advantages of ICs.

(2) Explain Op-Amp as comparator.

(3) Explain strain gauge.

(4) Explain resistive position transducer.

(5) Discuss on D flip-flop.

(6) Write a note on multiplexer.

(c) Answer any two in detail : **10**

(1) Explain the classification of ICs based on structure.

(2) Explain Op-Amp as an adder.

(3) Explain construction and working of LVDT.

(4) Write a note on piezoelectric transducer.

(5) Write a note on J-K flip-flop.

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