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SEAT No. _____

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SARDAR PATEL UNIVERSITY V.V.NAGAR

B.Sc. (IVth SEM.) INSTRUMENTATION (Voc.)

7th APRIL-2018 EXAMINATION, Saturday,

POWER ELECTRONIS (US04CINV01)

TIME: 10:00 am to 1:00 pm

MARKS-70

Q-1 Choose correct answer

[10]

1. _____ is triggered in conduction by applying only positive voltage for gate signal.
(A) SCR (C) TRIAC
(B) DIAC (D) None of above
2. SUS full name _____
(A) silicon unilateral switch (C) silicon uniport switch
(B) silicon unipolar switch (D) None of above
3. The total turn on time depends on _____
(A) rise time (C) Anode circuit parameter.
(B) gate signal amplitude (D) All of above
4. _____ is bi-lateral device with three terminals.
(A) SCR (C) DIAC
(B) TRIAC (D) All of above
5. _____ is used for power control.
(A) TRIAC (C) DIAC
(B) SCR (D) All of above
6. Maximum time delay for AC braking the circuit is one _____ cycle.
(A) 1/2 (C) 1/4
(B) 1/3 (D) None of above
7. Megger is a portable instrument. It is used for the measurement of _____
(A) Low resistance (C) High inductance
(B) High resistance (D) None of above
8. The operating voltage of a Megger is about _____.
(A) 120 volt (C) 400 volt
(B) 500 volt (D) None of above
9. The conventional UJT is made up of a _____ type silicon base and _____ type of emitter.
(A) P,P (C) N,P
(B) P,N (D) None of above
10. _____ is used as a relaxation oscillation to obtain sharp pulses with good rise time.
(A) TRIAC (C) DIAC
(B) SCR (D) UJT

Q-2 Short answer type question. (any ten)

[20]

1. List points designing a gate control circuit of turning on mechanism.
2. What is cycloconverter? List its application.
3. List possible fault in electric toaster.
4. Differentiate DIAC and TRIAC.
5. Draw snubber circuit and explain it.
6. Draw SCS characteristics and symbol.
7. List application of Megger.
8. Differentiate CSCR and UJT.
9. Enlist Non-automatic iron parts.
10. Define relaxation oscillator.
11. List possible faults in an automatic iron.
12. Can we use SCR in inverter? Why?

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(PTO)

- Q.3 Discuss parallel connected operation of SCR with necessary figure. [10]
OR
- Q.3 Discuss series connected operation of SCR with necessary figure. [10]
- Q.4(A) Explain the constructional mechanism and triggering mode of TRIAC with necessary figure. [06]
Q.4(B) Explain DIAC phase control circuit. [04]
OR
- Q.4(A) Explain the constructional mechanism and characteristics of UJT with necessary figure. [06]
Q.4(B) Draw circuit of UJT as a relaxation oscillator and explain it. [04]
- Q.5(A) Explain static breaker circuit with necessary figure. [05]
Q.5(B) Explain logical circuits using SCS device with necessary figure. [05]
OR
- Q.5(A) Explain thyristor application: Integral cycle triggering [05]
Q.5(B) Explain thyristor application: Zero voltage switch. [05]
- Q.6 What is Megger? Explain construction and working principle with testing of wiring installation. [10]
OR
- Q.6(A) Discuss use of thermostat in the heating application. [05]
Q.6(B) Explain constructional and working of hair drier with possible faults and causes and remedies. [05]