

## Electrical Engineering Solved Papers

1. Mho relay is usually employed for the protection of
- Short lines only
  - Medium lines only
  - Long lines only
  - Any line

Ans: Long lines only

2. A modern power semiconductor device IGBT is combines the characteristics of
- BJT and MOSFET
  - FCT and GTO
  - SCR and MOSFET
  - SCR and BJT

Ans: BJT and MOSFET

3. For a single-phase a.c. to d.c. controlled rectifier to operate in regenerative mode, which of the following conditions should be satisfied?
- Half -controlled bridge, a  $90^\circ$ , source of e.m.f. in load
  - Full-controlled bridge, a  $> 90^\circ$ , source of e.m.f. in load
  - Full-controlled bridge, a  $90^\circ$ , source of e.m.f. in load

4. Which is the most suitable power device for high frequency ( more 100 kHz) switching application?
- Power MOSFET
  - BJT
  - SCR
  - UJT

Ans: Power MOSFET

5. In a thyristor Latching current is \_\_\_\_\_ than Holding current
- Equal
  - Less
  - Greater
  - None

Ans: Greater

6. The transfer function of a system is  $10/(1+s)$  when operating as a unity feedback system, the steady state error to a step input will be
- 0
  - 1/11
  - 10
  - Infinity

Ans: 1/11

7. Which one of the following statements for a dc machine which is provided with inter pole winding (IW) as well as compensating winding (CW) is correct
- Both IW and CW are connected in series with Armature winding
  - Both IW and CW are connected in parallel with Armature winding
  - IW connected in series but CW is connected in parallel with Armature winding
  - CW connected in series but IW is connected in parallel with Armature winding

Ans: Both IW and CW are connected in series with Armature winding

8. A 0-10 mA PMMC ammeter reads 5mA in a circuit; its bottom control spring snaps out suddenly

the meter will now read.

- a) 5mA
- b) 10mA
- c) 2.5mA
- d) 0

Ans: 0

9. A dc cumulatively compounded motor delivers rated load torque at rated speed. If series field is short circuited, then the armature current and speed will

- a) Both increases
- b) Both decreases
- c) Increases and decreases
- d) Decreases and increases

Ans: Both increases

10. Moving coil in dynamometer wattmeter connected

- a) In series with fixed coil
- b) Across supply
- c) In series with load
- d) Across load

Ans: Across supply

11. In an induction machine, if the air gap increased

- a) Speed will be reduced
- b) Efficiency will be improved
- c) Power factor will be lowered
- d) Breakdown torque will be reduced

Ans: Power factor will be lowered

12. A CRO screen has ten divisions on the horizontal scale. If a voltage signal  $5 \sin 314t + 45 \text{ deg}$  is examined with a line base settings of 5 msec/div, the number of cycles of signal displayed on the screen will be

- a) 0.5 cycles
- b) 2.5 cycles
- c) 5 cycles
- d) 10 cycles

Ans: 2.5 cycles

13. A 3-phase 50HZ SCIM takes a power input of 30 KW at its full load speed of 1440 rpm. Total stator losses are 1 KW. The slip and rotor ohmic losses at full load are

- a) 0.02, 600 W
- b) 0.04, 580 W
- c) 0.04, 1160 W
- d) 0.04, 1200 W

Ans: 0.04, 1160 W

14. Thermocouple is used to measure

- a) AC
- b) DC
- c) Both
- d) None

Ans: Both

15. The two watt meters measurement the ratio of two meter readings is  $-(1-\sqrt{3})/(1+\sqrt{3})$  then the power factor is

- a) 1
- b) 0.866
- c) 0.707
- d) 0

Ans: 0.707

16. Hays bridge is used to measure \_\_\_\_\_ and Schering bridge is used to measure \_\_\_\_\_

- a) Inductance, Inductance
- b) Inductance, Capacitance
- c) Capacitance, Inductance
- d) Resistance, Capacitance

Ans: Inductance, Capacitance

17. When sine wave is given as input to Schmitt trigger then its generates

- a) Sine wave
- b) Saw tooth wave
- c) Triangle wave
- d) Square wave

Ans: Square wave

18. In Gauss Seidel method the following factors are influenced for operation

- a) Acceleration factor
- b) Selection of slack buss
- c) Both
- d) None

Ans: Selection of slack buss\*

19.

- i.  $(X'+Y')$  A. Low-pass filter function
- ii.  $(X'Y')$  B. Sum
- iii.  $(XY)$  C. NAND
- D. Carry
- E. NOR

- a) i-C, ii-E, iii-D
- b) i-C, ii-E, iii-B
- c) i-C, ii-B, iii-D
- d) i-C, ii-E, iii-A

Ans: i-C, ii-E, iii-D

20. The phase lead compensation is used to

- a) Increase rise time and decrease overshoot
- b) Decrease both rise time and overshoot
- c) Increase both rise time and overshoot
- d) Decrease rise time and increase overshoot

Ans: Decrease rise time and increase overshoot

21. Voltage feed back amplifier is a

- a) Shunt-Shunt
- b) Shunt-Series
- c) Series-Shunt
- d) Series- Series

Ans: Shunt-Shunt

22. In microprocessor the next instruction to be executed is stored in

- a) Program Counter
- b) Stack Pointer
- c) Memory Pointer
- d) Accumulator

Ans: Program Counter

23. The following element retains it energy after source is disconnected

- a) Resister
- b) Inductor
- c) Capacitor
- d) Thermistor

Ans:

24. In series RLC circuit at resonant

- a) Voltage is in phase with current
- b) Current is maximum
- c) Inductive reactance = Capacitive reactance
- d) All of the above

Ans: All of the above

25. For RC low pass filter  $R=100\text{ K ohms}$ ,  $C= 5\text{ micro farads}$  then lower cutt of frequency is

- a) 1 K HZ
- b) 0 HZ
- c) 381.3 HZ
- d) Infinity

Ans:

26.  $V=100\sin(1000t+46\text{ deg})$ ,  $I=2\sin(1000t+80\text{ deg})$  what are the elements in the circuit

- a)  $R=30\text{ ohm}$ ,  $L=30\text{ mH}$
- b)  $R=30\text{ ohm}$ ,  $C=33.3\text{ micro farads}$
- c)  $R=40\text{ ohm}$ ,  $L=30\text{ mH}$
- d)  $R=40\text{ ohm}$ ,  $L=33.3\text{ micro farads}$

Ans:  $R=40\text{ ohm}$ ,  $L=33.3\text{ micro farads}$

27.  $L=10\text{ mH}$ ,  $I=100\sin 50t$

- a)
- b)
- c)
- d)

Ans:

28. In dielectric measurement, the dielectric loss is proportional to

- a) F
- b) V
- c) I
- d)  $V\sqrt{f}$

Ans:  $V\sqrt{f}$

29.  $G(s) = (1-s)/s(s+2)$  then closed loop transfer function is

- a) Unstable
- b) Stable
- c) Marginally stable
- d) All

Ans: Stable

30.  $G(s) = (1+0.5s)/(1+s)$  find which type of net work it is

- a) Lead net work
- b) Lag net work
- c) Lag - Lead net work
- d) Lead - Lag net work

Ans: Lag net work