

NHPC Electrical Placement Paper for Trainee Engineer

1. Mho relay is usually employed for the protection of

- a) Short lines only
- b) Medium lines only
- c) Long lines only
- d) Any line

Ans: Long lines only

2. A modern power semiconductor device IGBT is combines the characteristics of

- a) BJT and MOSFET
- b) FCT and GTO
- c) SCR and MOSFET
- d) 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?

- a) Half –controlled bridge, $\alpha < 90^\circ$, source of e.m.f. in load
- b) Full-controlled bridge, $\alpha > 90^\circ$, source of e.m.f. in load
- c) Full-controlled bridge, $\alpha < 90^\circ$, source of e.m.f. in load
- d) Full-controlled bridge, $\alpha > 90^\circ$, source of e.m.f. in load

4. Which is the most suitable power device for high frequency (more 100 kHz) switching application?

- a) Power MOSFET
- b) BJT
- c) SCR
- d) UJT

Ans: Power MOSFET

5. In a thyristor Latching current is _____ than Holding current

- a) Equal
- b) Less
- c) Greater
- d) 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

- a) 0
- b) $1/11$
- c) 10
- d) Infinity

Ans: $1/11$

7. Which one of the following statements for a dc machine which is provided with interpole winding (IW) as well as compensating winding (CW) is correct

- a) Both IW and CW are connected in series with Armature winding
- b) Both IW and CW are connected in parallel with Armature winding
- c) IW connected in series but CW is connected in parallel with Armature winding
- d) 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 $5 \sin(314t + 45^\circ)$ 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. 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

20. Voltage feed back amplifier is a

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

Ans: Shunt-Shunt

21. 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

22. The following element retains its energy after source is disconnected

a) Resistor

b) Inductor

c) Capacitor

d) Thermistor

23. In series RLC circuit at resonance

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

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

a) 1 KHZ

b) 0 HZ

c) 381.3 HZ

d) Infinity

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

a) F

b) V

c) I

d) $V\sqrt{\omega}$

Ans: $V\sqrt{\omega}$

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

a) Unstable

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

Ans: Stable

27. $G(s) = (1+0.5s)/(1+s)$ 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

28. Temperature of electrode in Arc furnace is

- a) 1000 deg
- b) 1500 deg
- c) 1500 deg to 3500 deg
- d) 4500 deg

29. Nyquist stability is used to determine

- a) Absolute Stability
- b) Relative Stability
- c) Both
- d) None

30. When 220V dc shunt alternator generating the voltage at rated value. If direction of rotation is reversed, then alternator will

- a) Build up its voltage with same polarity
- b) Build up its voltage with opposite polarity
- c) No build up of voltage
- d) None

Ans: No build up of voltage

31. Over lap Angle depends on _____

- a) Load inductance
- b) Load capacitance
- c) Source inductance
- d) Source capacitance

Ans: Source inductance

32. Area under speed time curve gives

- a) Time
- b) Speed
- c) Distance
- d) None

Ans: Distance

33. The regulation of Short Transmission lines depends up on

- a) Distance of line
- b) Frequency
- c) Power factor
- d) All

Ans: Power factor

34. Which of the following plant is having lowest load factor?

- a) Diesel Plant
- b) Pumped storage Plant
- c) Thermal Plant
- d) Nuclear Plant

Ans: Diesel Plan

35. For SR latch whent the out put is undesirable

- a) 0, 0
- b) 1, 0

c) 0, 1

d) 1, 1

Ans: 1, 1

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