TATA STEEL
#WeAlsoMakeTomorrow

TATA

TATA STEEL JET EXAMINATION ELECTRICAL SAMPLE PAPER (Sample 50 questions)

A. DOMAIN

1. The machines generating electrical energy. using permanent magnet is called
(A). generator (B) motor (C). dynamo. (D) magneto

2. What is the magnetic potential difference across an air: gap of 1 cm length having magnetic field strength 100 AT/m?
(A) 4 AT (B) 2 AT (C) ½ AT (D) 1 AT

3.The instantaneous magnitudes of voltage and current in an AC circuit is 5 sin(ωt+30°), 6 cos (ωt-60")) respectively. The Circuit operates' at
(A) unity power factor
(B) zero power factor leading
(C) zero power factor lagging
(D) None of these

4. State the SI unit of magnetic flux density.

(A). Weber (B) Maxwell (C) Volt-second (D). Tesla -.

5. In "ferromagnetic materials" relative permeability is –

(A) slightly greater than unity (B) less than-unity (C) much less than unity (D) much higher than unity

6.'Single phase distribution is carried out from

(A)3 phase system without neutral
(B) 3 phase system with neutral
(C) one phase and one neutral system
(D) None of these.

7.The active and reactive volt amperes consumed: by a load is s 6000 +j 8000 VA: The load: impedance' is 200 ohms. The circuit is a series combination of :

(A) 200 ohms resistance: only;
(B) 120 ohm resistance and 120 ohm capacitive reactance
(C) 160 ohm resistance and 120 ohm capacitive reactance. -
(D) 120 ohm resistance and 160 ohm capacitive reactance

8. When: 1 C of charge is allowed to. flow. through in electrolyte, the mass of substance deposited is equal to.

(A) E.CE. of that substance.
(B) equivalent weight of that substance
(C) atomic weight of that substance
(D) None of these

9. In order to find the E.C.E of a substance, its Chemical equivalent is multiplied by E.C.E. of

(A) hydrogen (B) oxygen (C) carbon dioxide (D) sulphur

10.The average value of sin2 θ over-a a complete cycle i is

(A) +1 (B)-1 (C)1/2 (D) Zero

11.if current in an electric bulb drops by 2%, then power decreases. by

(A) 2% (B) 4% (C) 1% {D) 16%

12.Two bulbs. of 500-W and:300 W are manufactured to operate on 220-V line. The ratio of resistance of om W bulb to that of 300 W bulb is:

(A) 5:3 (B) 9:25. (C) 3:5 (D) 25:9

13. A de shunt generator fails to build up at the rated speed due to

(A) loss of residual magnetism in the field. pole

(B) field circuit resistance is 'higher than critical value
(C) Either (A) or (B).

(D) Both (A) & (B)

14.What is-immaterial for a fuse?

(A) its resistivity (B) Its radius (C) Its length (D) None. of these

15. If the relative permittivity of the medium increases, the electric intensity of a point. Due to given charge:

(A) increases (C) decreases
(B) remains the same (D)- None. of these.

16. An electric. dipole is placed in.a. non-uniform. electric. fi eld. At. experiences!

(A) a force but-no torque (C) a force and a torque.
(B) a torque but no force (D)neither a force nor a torque

17. Electric lines of force about a negative point charge are

(A) circular clockwise (C) radial outward
(B) radial inward (B) circular anticlockwise

18. The mast convenient way of achieving large capacitance is by using

(A) multiple construction
(B) decreased distance between plates
(C) air as dielectric (D) dielectric of low permittivity

19. Find the current through the branch AB. of the circuit below.

(A) 1 amp (B) 0.5 amp. (C) 2 amp.. — (D) 0.4 amp

20. A capacitor opposes

(A) change in current
(B) change in voltage
(C) both change in current and voltage
(D) None of these

21. Which of the following ranges a meter requires. the smallest shunt resistance?

(A) 0-10 mA. (B)0-100 mA (C) 0-1 Amp (D) 0-10 Amp

22. "The capacitance of a. parallel-plate capacitor does NOT depend upon -

(A) area-of plates (B) medium between plates
(B) separation between plates (D) metal of plates

23. The- magnetic material used. in permanent- magnets is

(A) iron (B) soft steel (C) nickel (D) hardened steel

24. The magnetic material used in temporary magnets is -

(B) hardened steel (B) cobalt steel

(C) soft iron (D) tungsten steel

25. Dielectric loss can be measured, by

(A) Electrostatic wattmeter (B). Wheatstone- bridge

(C). Energy meter (D) None of these

B. GENERAL APTITUDE

26. If 42 persons consume 144 kg of rice in 45 days; then in how many days will 30 persons consume 48 kg of rice?

(A) 6 days. (B) 7 days. (C) 8 days (D)12 days:

27. The area of a circle is 24.64 m^2. The circumference of the circle is:

(A) 14.64 m (B)16.36m (C) 17.60.m (D) 18.40 m

28. A certain number of tennis balls were purchased for Rs: 450: Five more balls could have been purchased in the same amount if each ball was cheaper by Rs. 45. The number of balls purchased were:

(A) 10 (B) 15 (C) 20 (D)25

29. Which National Highway connects Delhi and Mumbai? -

(A) NH6 (B). NH 8 (C)NH10 (D) NH 12,

30. A two-digit number is 7 times the sum of its digits. The number formed by reversing its digits is 18 less than the original number. What is the number?

(A) 42 (B) 52 (C)62 (D) 72

C. ENGLISH

31.It was _____hot that day and the cable suffered the brunt of the heat, AW
(A)treacherously (B) acceptably. (C). unfailingly (D). unbelievably -

32. _____my knowledge, Mr. Akash has a 'prejudice _____foreigners.

(A) in..... for (B) as..... towards. (C) for ..... at (D) to.....against

Direction for questions 33-34:

In the following questions, you will find sentences part of which is bold.

Compare the bold part of each sentence with the expressions (A), (B) and (C) given below: Choose the expression which is an improvement upon the bold part. If none of the three expressions improve the sentence, then your answer is (D).

Questions:

33.It is high time she. **changes** her job.

(A) must change (C) had changed
(B) changed (D) No improvement

34. I am surprised that **he dares speak** in such a tone to his father.

(C) he dares to speak (C) he dare to speak
(D) he dare speak (D)No improvement

35. Choose the word which is **nearest in** meaning to the 'bold typed word. He could rise to this stature because of **his invincible** 'courage.

(A) inviolable (B) unmanageable
(C) unbeatable (D) immeasurable

D. CURRENT INDUSTRY TRENDS

36. What is the full-form of AI in field of technology?

A. Artificial Information
B. Artificial Intelligence
C. Additional Intelligence
D. Augmented Intelligence

37. TPM concept was first initiated by

A. Suzuki
B. Nippon Densco
C. TOYOTA
D. Ford Automobiles

38. Full form of TOC is

A. Theory of Constraints
B. Tata Overseas Company
C. Theory of Change
D. Theory of Commitment

39. The purpose of CPR in Industry Safety is to:

(A) Maintain oxygenated blood circulation
(B) Stabilize body temperature to avoid hypothermia
(C) Build upper body strength
(D) Dislodge blood clots within the victim's lungs

40. A confined space is deemed ready for employee entry when:

(A) A company safety inspector has certified it
(B) The unit operations foreman declares it ready
(C) An engineer has completed the necessary calculations
(D) Your supervisor assigns you to the job

E. INDUSTRIAL ORIENTED LEARNING

41. What does capacitance grading of cables mean?

(A) Use of dielectrics in different concentrations
(B) Introduction of capacitance at various lengths of cable to counter the effect of inductance
(C) Use of dielectrics of different permittivities
(D) Grading according to capacitance per km length of the cable

42. The breakdown voltage of a cable depends on

(A) presence of moisture
(B) working temperature
(C) time of application of the voltage
(D) all of the above

43. The most commonly used material for insulators of overhead line is

(A) Porcelain

(B) Glass
(C) Mica
(D) PVC

44. Phase modifiers in AC transmission lines are

(A) Induction machine
(B) Synchronous machine
(C) DC machine
(D) Transformer

45. 5 X 10^16 electrons pass across the section of a conductor in 1 minutes and 20 seconds. The current flowing is

(A) 0.1 mA
(B) 1 mA
(C) 10 mA
(D) 100 mA

46. Testing of earth-pit is work on the principle

(A) Fall of Potential
(B) Fall of Current
(C) Fall of Resistance
(D) None of the Above

47. What is an earth electrode?

(A) rod connected to water line
(B) electrode used for earthing
(C) electrode connected to the circuit
(D) electrode which is connected to the mains

48. An auto transformer has

(A) One Winding
(B) Two Winding
(C) Three Winding
(D) None of the Above

49. The eddy current losses in the transformer will be reduced if

A. The laminations are thick
B. Number of turns in the primary winding is reduced
C. The number of turns in the secondary winding is reduced
D. The laminations are thin

50. If supply frequency to the transformer is increased, the iron losses _____

(A) Will decrease
(B) Will increase
(C) No change
(D) Constant