Rabindra Nath Tagore University

** All questions are compulsory , there is no negative marking, You have to print this question paper & then provide correct answers and submit answers to this question paper over google link provided

**सभी प्रश्न अननवार्य हैं, कोई नकारात्मक अंकन नहk ं है, आपको इस प्रश्न पत्र को print करना होगा और फिर सहi उत्तर प्रदान करना होगा और इस प्रश्न पत्र के उत्तर ददए गए Google Link पर जमा करना होगा

Candidate Name- Registration Number-

Aadhar Number - Father Name-

1. Atom of any element is : फकसी तत्व का अणु होता है।

(a) Positively charged / धनावेलित

(b) Uncharged/ बिना फकसी आवि का

(c) Negatively charged/ऋण आवेलित

(d) Charged positive or negative धनावेलित अथवा ऋण आवेलित

Write Answer

2. _____has the highest mobility..

_____की चा कता अधधकतम होती है।

(a) Ions / आर्न

(b) Electrons / इ ेक्ट्रौन

(c) Neutron / न्ूरॉन

(d) Proton/प्रोटान

Write Answer

3. Conduction of electricity through conductor takes place by_. फकसी चा क में प्वद्ुत की चा कता फकसके द्वारा होती है।

(a) Protons/प्रोटान

(b) Neutrons / न्यूट्रॉन्स

(c) Bound electrons /सीलमत (िाउंड) इ ेक्ट्रॉन्स

(d) Free electrons /मुक्त इ ेक्ट्रॉन्स

Write Answer

4. Ohm is the unit of /ओहम फकसकी एक इकाई है:

(a) Current/धारा

(b) Resistance/प्रनतरोध

(c) Voltage/वोल्टता

(d) None of these / इनमें से कोई नहkं

Write Answer

5. According to Ohm's law : ओहम के ननर्म के अनुसार:

(a) The voltage is constant to current वोल्टता धारा से स्थथर है

(b) The voltage is proportional to current वोल्टता धारा के अनुपानतक है

(c) Voltage is inversely proportional to current वोल्टता धारा के व्युत्रमीर् अनुपानतक है

(d) The voltage is proportional to resistance वोल्टता प्रनतरोध के अनुपानतक है

Write Answer

6. The curve representing Ohm's law is : ओहम ननर्म को प्रदलियत करने वा ा वर है

(a) Linear/ रैखिक

(b) Hyperbolic/अनतपरव नर्क

(c) Parabolic/परव नर्क

(d) Triangular/ बत्रकोणीर्

Write Answer

7. According to Kirchoff's voltage law, the algebric sum of all IR drops and e.m.f.s in any closed loop of a network is always_____.
फकरचिॉ के वोल्टेज लसद्धान्त के अनुसार नेटवकय के कोई भी ि्न्द ूप में सभी आइआर-ड्रॉप्स और इएमएि का जोड़ हमिेा _____होता है.

(a) negative / ऋणात्मक

(b) positive / धनात्मक

(c) determined by battery e.m.f.s ैिटरk के इएमएि द्वारा ननधाययरत

(d) zero/ि ून्र्

Write Answer

8. The algebraic sum of all the currents meeting a junction is equal to _____.
एक जंक्ट्िन पर लम ने वा े सभी करेंट के ीजगखणतीर् ंरोग ़िरिार होता है.

(a) 1

(b) – 1

(c) Zero/ि ून्र्

(d) Can't say / कहा नहk ं जा सकता

Write Answer

9. Which law states that the relation between the current, voltage and resistance in a closed circuit is at a constant temperature ?
कौन सा ननर्म कहता है फक एक ि्द सफकय ट में करंट, वोल्टेज और प्रनतरोध के ीच संिंध एक स्थथर तापमान पर होता है?

(A) Kirchhoff's current law फकरचिॉ का करंट ननर्म

(B) Ohm's law ओहम का ननर्म

(C) Kirchhoff's voltage law फकरचिॉ का वोल्टेज ननर्म

(D) Laws of resistnace प्रनतरोध के ननर्म

Write Answer

10. Which law states that, in each closed circuit, the sum of all voltage drops are equal to zero

कौन सा ननर्म कहता है फक, प्रत्ेक िंद सफकय ट में, सभी वोल्टेज िंूदों का ोग ूिन्र् के ािरार होता है

(A) Ohm's law ओहम का ननर्म

(B) Kirchhof's 1st law फकरचहिो का पह ा ननर्म

(C) Kirchhof's 2nd law फकरचहिो का दूसरा ननर्म

(D) Coulomb's law कू म्ि का ननर्म

Write Answer

11. Which of the following elements of electrical engineering cannot be analyzed using Ohm's law?
a) Capacitors
b) Inductors
c) Transistors

Write Answer

d) Resistance

12. What is constant for a charged spherical shell according to basic electrical energy?
a) Electrical potential outside the spherical shell
b) Electrical potential inside the spherical shell
c) Electrical field outside the spherical shell

Write Answer

d) Electrical field inside the spherical shell

13. Where does electro-static shielding occur in a charged spherical shell?
a) When electrical potential outside spherical shell is zero
b) When electrical potential inside the spherical shell is zero
c) When electrical field outside the spherical shell
d) Electrical field inside the spherical shell

Write Answer

14. Which of the following is a correct representation of peak value in an AC Circuit?
a) RMS value/Peak factor
b) RMS value*Form factor
c) RMS value/Form factor

d) RMS value*Peak factor

Write Answer

15. Which of the following according to fundaments of electrical energy is correct about alternating current?

a) Frequency is zero

b) Magnitude changes with time

c) Can be transported to larger distances with less loss in power

Write Answer

d) Flows in both directions

16. How many cycles will an AC signal make in 2 seconds if its frequency is 100 Hz?

a) 50

b) 100

c) 150

d) 200

Write Answer

17. What will be the direction of the drift velocity of electrons change with respect to the electric field?

a) same as that of electric field

b) opposite to that of electric field

c) perpendicular to that of the electric field in a positive direction

d) perpendicular to that of the electric field in a negative direction

Write Answer

18. What will be the current density of metal if a current of 30A is passed through a cross-sectional area of $0.5m^2$?

a) $7.5\ A/m^2$

b) $15\ A/m^2$

c) $60\ A/m^2$

Write Answer

d) $120\ A/m^2$

19. Which of the following is correct about the power consumed by R_1 and R_2 connected in series if the value of R_1 is greater than R_2?

a) R_1 will consume more power

b) R_2 will consume more power

c) R_1 and R_2 will consume the same power

d) The relationship between the power consumed cannot be established

Write Answer

20. What is zero for a charged spherical shell?

a) Electrical potential outside the spherical shell
b) Electrical potential inside the spherical shell
c) Electrical field outside the spherical shell
d) Electrical field inside the spherical shell

Write Answer

21. What kind of quantity is an Electric potential?

a) Vector quantity
b) Tensor quantity
c) Scalar quantity

Write Answer

d) Dimensionless quantity

22. What do crowded lines of force indicate?

a) Strong electric field
b) Weak electric field
c) Strong electric potential
d) Weak electric potential

Write Answer

23. What is the direction of the electric field at a point?

a) Along the line perpendicular to the electric field
b) Along the line tangent to the electric field
c) Electric field has no direction
d) Electric field has a random direction

Write Answer

24. What is the magnitude of mutually induced emf, E_2 in a transformer?

a) directly proportional to rate of change of flux and number of secondary turns
b) inversely proportional to rate of change of flux and number of secondary turns
c) proportional to rate of change of flux and inversely proportional to number of secondary turns
d) inversely proportional to the rate of change of flux and proportional to number of secondary turns

Write Answer

25. Which of the following will happen in a transformer when the number of secondary turns is less than the number of primary turns?
a) The voltage gets stepped up
b The voltage gets stepped down
c) The power gets stepped up
d) The power gets stepped down
Write Answer

26. What is the number of primary turns in a 200/1000 V transformer if the emf per turn is 10V?
a) 5
b) 10
c) 20

Write Answer
d) 40

27. Which of the following is a correct representation of average value in an AC Circuit?
a) RMS value/Form factor
b) RMS value*Form factor
c) RMS value/Peak factor

Write Answer
d) RMS value*Peak factor

28. Who defined electric current and devised a method to measure current?
a) Michael Faraday
b) Andre-Marie Ampere
c) Nikola Tesla
d) Alessandro Antonio Volta
Write Answer

29. How many electrons will constitute 2 Coulombs of electric charge?
a) $6.24 * 10^{18}$ electrons
b) $12.48 * 10^{18}$ electrons
c) $1.602 * 10^{19}$ electrons

Write Answer
d) $3.204 * 10^{19}$ electrons

30. Which of the following is correct about direct current?
a) Magnitude is constant
b) Frequency is zero
c) Can be transported to larger distances with less loss in power
d) Flows in one direction
Write Answer

31. Who witnessed the effect of magnetism for the first time?
a) Hans Christian Orsted
b) Alexander Graham Bell
c) Michael Faraday
d) Gustav Robert Kirchhoff
Write Answer

32. Which of the following according is correct about electrical conductivity?
a) It is the ratio of current density to the electric field
b) It is the product of current density and electric field
c) It is the ratio of the electric field to current density
Write Answer
d) It is the reciprocal of the product of current density and electric field

33. What is responsible for the current to flow?
a) Protons
b) Electrons
c) Nucleus
d) Protons and Electrons
Write Answer

34. Which of the following according to KCL must be zero?
a) Algebraic sum of currents in closed-loop
b) Algebraic sum of power in closed-loop
c) Algebraic sum of currents entering and leaving a junction
d) Algebraic sum of voltages across the input and output
Write Answer

35. How many directions can the electric field at a point have?
a) Zero

b) One
c) Two

Write Answer
d) Many

36. Which of the following will happen in a transformer when the number of secondary turns is greater than the number of primary turns?
a) The voltage gets stepped up
b) The voltage gets stepped down
c) The power gets stepped up
d) The power gets stepped down
Write Answer

37. Which of the following is correct about the voltage transformation ratio in electrical engineering?
a) Ratio of number of primary turns to the number of secondary turns
b) Ratio of induced emf in secondary to induced emf in primary
c) Ratio of secondary current to the primary current

Write Answer
d) Ratio of power in primary to power in secondary

38. Which of the following according to the fundamentals of electrical engineering is correct about the induced emf in primary of transformer?
a) It is the ratio of primary turns to emf induced per turn
b) It is the product of primary turns and emf induced per turn
c) It is the ratio of secondary turns to emf induced per turn
d) It is the product of secondary turns and emf induced per turn
Write Answer

39. Which of the following current is drawn by the primary circuit of an ideal transformer when the secondary is open?
a) Secondary current
b) Leakage current
c) Magnetizing current
d) Working on current
Write Answer

40. What does positive power in an electrical element indicate?
a) Element is absorbing power
b) Element is supplying power
c) Element may absorb or supply power

d) Element is neither absorbing nor supplying power

Write Answer

41. How does induce emf in DC motor react to supply voltage?

a) It will aid the supply voltage

b) It will be double the supply voltage

c) It will oppose the supply voltage

write Answer

d) It will be half of the supply voltage

42. Which of the following type of circuits in electrical engineering cannot be analyzed using Ohm's law?

a) Unilateral

b) Bilateral

c) Linear

d) Conductors

write Answer

43. Which of the following according to KVL must be zero?

a) Algebraic sum of currents in closed-loop

b) Algebraic sum of power in closed-loop

c) Algebraic sum of losses in closed-loop

d) Algebraic sum of voltages in closed-loop

write Answer