CBCS
2020
ELECTRONICS
MODEL QUESTION PAPER FOR ODD SEMESTER EXAMINATION 2020
MULTIPLE CHOICE (MCQ)

UNIT – 1

1. Which of the following is not fixed resistor:
    (a) Carbon Composition Resistors
    (b) Wire Wound Resistors
    (c) Thin Film Resistors
    (d) Potentiometer

2. For 2.7 k Ω ± 10% resistor, the colour code is:
    (a) Red, violet, red and silver
    (b) Red, violet, orange and silver
    (c) Red, violet, yellow and gold
    (d) Red, violet, red and gold

3. Which of the following resistor used a very thin resistive carbon layer or film overlaid around the rod in the form of spiral helix?
    (a) Cermet Oxide Resistor
    (b) Metal Oxide Resistor
    (c) Carbon Composition Resistor
    (d) Carbon Film Resistor

4. Capacitor stores which type of energy?
    (a) Kinetic energy
    (b) Vibrational energy
    (c) Potential energy
    (d) Heat energy

5. Capacitance of a capacitor is defined as:
    (a) Q/V
    (b) V/Q
    (c) 1/RC
    (d) Q/R

6. A capacitor that stores 0.5 C at 10 volts has a capacitance of
    (a) 5 F
    (b) 20 F
    (c) 10 F
    (d) 0.05 F

7. After one time constants, the capacitor in an RC circuit is discharged to what percentage of the starting voltage?
    (a) 13.5 percent
    (b) 36.8 percent
    (c) 86.5 percent
    (d) 63.2 percent

8.   When the current through an inductor decreases, the amount of energy stored in the electromagnetic field
        (a) increases
        (b) decreases
        (c) remains the same
        (d) doubles

9.   The phenomenon due to which there is an induced current in one coil due to the current in a neighbouring coil is?
        (a) Mutual inductance
        (b) Steady current
        (c) Electromagnetism
        (d) Susceptance

10.   Practical application of mutual inductance is
        (a) Transformer
        (b) Capacitor
        (c) AC generator
        (d) DC generator

UNIT – 2

1.   The sensitivity of a multimeter is given in ……..
        (a) Ω
        (b) ampere
        (c) kΩ/V
        (d) farad

2.   One of the essential elements of an electronic instrument is ……..
        (a) transducer
        (b) amplifier
        (c) breakdown device
        (d) oscillator

3.   If the full-scale deflection current of a multimeter is 50 µA, its sensitivity is ……..
        (a) 10 kΩ/V
        (b) 100 kΩ/V
        (c) 50 kΩ/V
        (d) 20 kΩ/V

4.   A voltmeter has a resistance of G ohms and range V volts. The value of resistance required in series to convert it into voltmeter of range nV is ………
        (a) nG
        (b) $\dfrac{G}{n}$
        (c) $\dfrac{G}{n-1}$
        (d) $(n-1)G$

5. A VTVM has ………. input resistance than that of a multimeter.
  (a) more
  (b) less
  (c) same
  (d) zero

6. For measuring a.c. voltage, ………. is used in conjunction with a VTVM.
  (a) multimeter
  (b) rectifier
  (c) transistor
  (d) CRO

7. The emitter- follower voltmeter has $V_{CC} = 20$ V, $R_S + R_m = 9.3$ kΩ, $I_m = 1$ mA and transistor $\beta = 100$. The meter current when E = 10V is …….
  (a) 1 mA
  (b) 2 mA
  (c) 1.5 mA
  (d) 3 mA

8. If the negative potential on the control grid of CRT is increased, the intensity of spot ……..
  (a) is increased
  (b) is decreased
  (c) remains the same
  (d) is zero

9. The signal to be observed on the screen of an oscilloscope is applied …..
  (a) across its X-plates
  (b) across its Y-plates
  (c) to the horizontal amplifier
  (d) to the trigger circuit

10. The deflection sensitivity of a CRT is 0.01 mm/V. The shift produced in the spot when 400 V are applied to the vertical plates is ………
  (a) 2 mm
  (b) 4 mm
  (c) 3 mm
  (d) 5 mm

UNIT – 3

1. The peak value of a sine wave is 200 V. Its average value is
  (a) 127.4 V
  (b) 141.4 V
  (c) 282.8 V
  (d) 200V

2. For a frequency of 200 Hz, the time period will be
  (a) 0.05 s
  (b) 0.005 s
  (c) 0.0005 s
  (d) 0.5 s

3. Power factor of the following circuit will be unity
   (a) inductance
   (b) capacitance
   (c) resistance
   (d) both (a) and (b)
4. In a pure resistive circuit
   (a) current lags behind the voltage by 90°
   (b) current leads the voltage by 90°
   (c) current can lead or lag the voltage by 90°
   (d) current is in phase with the voltage
5. The purpose of a parallel circuit resonance is to magnify
   (a) current
   (b) voltage
   (c) power
   (d) frequency
6. In a parallel R-C circuit, the current always_____the applied voltage
   (a) lags
   (b) leads
   (c) remains in phase with
   (d) none of the above
7. The value of an alternating current at any given instant is:
   (a) a maximum value
   (b) a peak value
   (c) an instantaneous value
   (d) an r.m.s. value
8. A tuned amplifier uses ……………. load
   (a) Resistive
   (b) Capacitive
   (c) LC tank
   (d) Inductive
9. At parallel resonance, the line current is ………………
   (a) Minimum
   (b) Maximum
   (c) Quite large
   (d) Negative
10. A _____ filter significantly attenuates all frequencies below fc and passes all frequencies above fc.
    (a) low-pass
    (b) high-pass
    (c) band-pass
    (d) band-stop

UNIT – 4

1. According to KCL as applied to a junction in a network of conductors
   - (a) total sum of currents meeting at the junction is zero
   - (b) no current can leave the junction without some current entering it
   - (c) net current flow at the junction is positive
   - (d) algebraic sum of the currents meeting at the junction is zero

2. What is the equivalent current for a voltage source of 12V in series with 4Ω resistance.
   - (a) 3A
   - (b) 12A
   - (c) 2A
   - (d) 0A

3. What is meant by mesh?
   - (a) loop that contains loop in it
   - (b) the entire loop that contains loop in it
   - (c) the smallest loop that contains NO loop in it
   - (d) loop that contains two loops in it

4. An Ideal voltage source is one which has
   - (a) zero internal impedance
   - (b) very high internal impedance
   - (c) very low internal impedance
   - (d) infinite internal impedance

5. In Practical voltage source, the Source resistance is
   - (a) equal to load resistance
   - (b) zero
   - (c) very low compared to load resistance
   - (d) very high compared to load resistance

6. Nodal analysis is generally used to determine_____
   - (a) Voltage
   - (b) Current
   - (c) Resistance
   - (d) Power

7. If there are M meshes, B branches and N nodes including reference node, the number of mesh currents is given as M=?
   - (a) B + (N+1)
   - (b) B + (N-1)
   - (c) B-(N+1)
   - (d) B-(N-1)

8. What is a planar circuit?
   - (a) Planner circuit is a simple circuit or network that contains many other circuits
   - (b) Planar circuit is a simple circuit or network that can be drawn on a plane surface where crossover is happening.
   - (c) Planar circuit is a simple circuit or network that can be drawn on a plane surface where no crossover is happening.
   - (d) Planar circuit is a simple circuit or network that can't be drawn on a plane surface where no crossover is happening.

9.   If the input impedance is Z_{in} and the source of emf is E_0, then the feeder current is

(a) $I = Z_{in} + E_o$

(b) $I = Z_{in} - E_o$

(c) $I = \dfrac{Z_{in}}{E_o}$

(d) $I = \dfrac{E_o}{Z_{in}}$

10.   In nodal analysis how many nodes are taken as reference nodes?

(a) 1

(b) 2

(c) 3

(d) 4

UNIT – 5

1.   The superposition theorem is applicable to

(a) Voltage only

(b) Current only

(c) Current, voltage and power

(d) Both current and voltage

2.   Efficiency of Maximum power transfer is

(a) 75%

(b) 25%

(c) 60%

(d) 50%

3.   Thevenin's theorem can be applied to the circuit having

(a) linear network

(b) passive network

(c) resistive network

(d) non-linear network

4.   Choose the incorrect statement.

(a) A branch formed by the parallel connection of any resistor R and open circuit has the characteristic of an open circuit

(b) A branch formed by the parallel connection of any resistor R and a short circuit has the characteristic of a short circuit

(c) A branch formed by the series connection of any resistor R and an open circuit has the characteristic of an open circuit

(d) A branch formed by the series connection of any resistor R and a short circuit has the characteristic of resistor R

5. In superposition theorem, when we consider the effect of one voltage source, all the other voltage sources are _____
   (a) Shorted
   (b) Opened
   (c) Removed
   (d) Undisturbed

6. Norton theorem is _____ form of an equivalent circuit.
   (a) Both current and voltage
   (b) Current
   (c) Voltage
   (d) Resistance

7. The output resistance of a voltage source is 4 Ω. Its internal resistance will be
   (a) 4 Ω
   (b) 2 Ω
   (c) 1 Ω
   (d) Infinite

8. Thevenin's theorem applies to
   (a) one port network
   (b) one port network
   (c) one port network
   (d) one port network

9. For high efficiency of transfer of power, internal resistance of the source should be
   (a) Equal to the load resistance
   (b) Less than the load resistance
   (c) More than the load resistance
   (d) None of the above

10. From the figure, R_{th}= ? (in ohm)
    (a) 2
    (b) 3
    (c) 4
    (d) 5