DIPLOMA IN CIVIL ENGINEERING (DCLE(G))/ DIPLOMA IN MECHANICAL ENGINEERING (DME)/DCLEVI/DMEVI/DELVI/DECVI/DCSVI

Term-End Examination, 2019   0698

BET-024 : E/M ENGINEERING

Time : 2 Hours   **Maximum Marks : 70**

Note : Attempt **all** questions. Use of Scientific calculator is permitted.

1. Select the correct answer from the given four alternatives for the following multiple choice objective type questions :   [14×1=14]

    (a)   The ratio of clearance volume to swept volume is called :

         (i)   Expansion Ratio

         (ii)   Cut-off Ratio

         (iii) Clearance Ratio

         (iv)   None of the above

(b)   The SI unit of magnetic field is :

    (i)   Tesla

    (ii)   Newton

    (iii)   Ampere

    (iv)   Ohm

(c)   A device which stores elctric charge in small space is called :

    (i)   Capacitor

    (ii)   Resistor

    (iii)   Conductor

    (iv)   Battery

(d)   When the transformer raises the voltage, it is called :

    (i)   Step Down Transformer

    (ii)   Voltage Transformer

(iii) Step up Transformer

(iv) Power Transformer

(e) Which is not a part of reciprocating engine ?

(i) Brake

(ii) Cylinder

(iii) Connecting rod

(iv) Piston

(f) Which of the following refrigerants is highly toxic and inflammable ?

(i) Carbon Dioxide

(ii) Sulphur Dioxide

(iii) Freon -12

(iv) Ammonia

(g)   The device used for measuring current is called:

  (i)   Generator

  (ii)   Voltmeter

  (iii) Ammeter

  (iv)   Galvanometer

(h)   Practically _____ Cycle is followed in diesel engine :

  (i)   Otto

  (ii)   Diesel

  (iii) Sterling

  (iv)   Rankine

(i)   Lumen is the unit of :

  (i)   Luminous flux

  (ii)   Luminous intensity

(iii) Luminous Capacity

(iv) LuminousVelocity

(j) Lenz's law is a consequence of the law of conservation of :

(i) Mass

(ii) Charge

(iii) Energy

(iv) Momentum

(k) Which of the following quantities remain constant in a step-down transformer ?

(i) Current

(ii) Voltage

(iii) Power

(iv) None of the above

(l)   In a vapour compression system, the lowest temperature during the cycle occurs after :

    (i)   Compression

    (ii)   Expansion

    (iii)   Condensation

    (iv)   Evaporation

(m)   The difference between C_p and C_v is equal to :

    (i)   2R

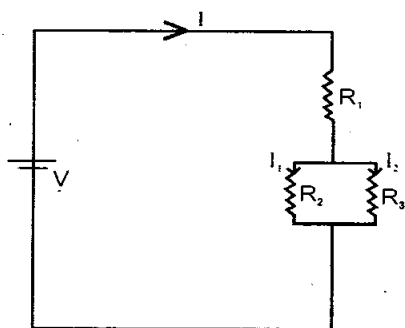   (ii)   R

    (iii)   R/2

    (iv)   Depends upon the atomicity of gas molecule

(n)   The DC generator has two main parts namely :

    (i)   A stator and a rotor

    (ii)   A stator and a pump

(iii)   A stator and a motor

(iv)   A motor and a pump

2.   (a)   Describe about pre-construction anti-termite treatment. Explain how post construction anti-termite treatment is carried out in buildings. [7]

(b)   Explain the relative advantages and disadvantages of brick, stone and block masonry constructions. [7]

3.   (a)   If $R_1 = 10\Omega$, $R_2 = 4\Omega$, $R_3 = 3\Omega$ and V=10 Volts, then calculate the current in all three resistors i.e, (I, I_1, I_2). [7]

(b)   Explain Kirchhof's current Law (KCL) and voltage law (KVL) with the help of electrical circuits. [7]

Note : Attempt **any two** of the following :

4. (a) Describe the vapour compression refrigeration system with a neat sketch.   [7]

    (b) What is lift ? How do you classify them ? Describe any one in brief.   [7]

    (c) Explain classification of doors with neat sketches.
                                                                     [7]

Note : Attempt **any two** of the following :   [7+7=14]

5. (a) Explain the following :

        (i)   Faraday's Law

        (ii)   Lenz's Law

        (iii) Eddy Currents

        (iv)   Solenoid

    (b) List the various components of vapour absorption system.

    (c) Discuss briefly the comparison between four stroke and two stroke cycle engine.

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