MAGNETIC CIRCUIT Multiple Choice Questions and Answers pdf :-

1. An air gap is usually inserted in magnetic circuits to
(a) increase m.m.f.
(b) increase the flux
(c) prevent saturation
(d) none of the above
Ans: c

2. The relative permeability of a ferromagnetic material is
(a) less than one
(b) more than one
(c) more than 10
(d) more than 100 or 1000
Ans: d

3. The unit of magnetic flux is
(a) henry
(b) weber
(c) ampereturn/weber
(d) ampere/metre
Ans: b

4. Permeability in a magnetic circuit corresponds to_____ in an electric circuit.
(a) resistance
(b) resistivity
(c) conductivity
(d) conductance
Ans: c

5. Point out the wrong statement.
Magnetic leakage is undesirable in electric machines because it
(a) lowers their power efficiency
(b) increases their cost of manufacture
(c) leads to their increased weight
(d) produces fringing
Ans: a

6. Relative permeability of vacuum is
(a) 1
(b) 1 H/m
(c) 1/4JI
(d) 4n x 10-‘ H/m
Ans: a

7. Permanent magnets are normally made of
(a) alnico alloys
(b) aluminium
(c) cast iron
(d) wrought iron
Ans: a

8. Energy stored by a coil is doubled when its current is increased by percent.
(a) 25
(b) 50
(c)41.4
(d) 100
Ans: c

9. Those magnetic materials are best suited for making armature and transformer cores which have_____permeability and_____hystersis loss.
(a) high, high
(b) low, high
(c) high, low
(d) low, low
Ans: c

10. The rate of rise of current through an inductive coil is maximum
(a) at 63.2% of its maximum steady value
(b) at the start of the current flow
(c) after one time constant
(d) near the final maximum value of current
Ans: b

11. When both the inductance and resistance of a coil are doubled the value of
(a) time constant remains unchanged
(b) initial rate of rise of current is doubled
(c) final steady current is doubled
(d) time constant is halved
Ans: a

12. The initial rate of rise of current through a coil of inductance 10 H when suddenly connected to a D.C. supply of 200 V is_____Vs
(a) 50
(b) 20
(c) 0.05
(d) 500
Ans: b

13. A material for good magnetic memory should have
(a) low hysteresis loss
(b) high permeability

(c) low retentivity
(d) high retentivity
Ans: d

14. Conductivity is analogous to
(a) retentivity
(b) resistivity
(c) permeability
(d) inductance
Ans: c

15. In a magnetic material hysteresis loss takes place primarily due to
(a) rapid reversals of its magnetisation
(b) flux density lagging behind magnetising force
(c) molecular friction
(d) it high retentivity
Ans: d

16. Those materials are well suited for making permanent magnets which have _____ retentivity and _____ coercivity.
(a) low, high
(b) high, high
(c) high, low
(d) low, low
Ans: b

17. If the area of hysteresis loop of a material is large, the hysteresis loss in this material will be
(a) zero
(b) small
(c) large
(d) none of the above
Ans: c

18. Hard steel is suitable for making permanent magnets because
(a) it has good residual magnetism
(b) its hysteresis loop has large area
(c) its mechanical strength is high
(d) its mechanical strength is low
Ans: a

19. Silicon steel is used in electrical machines because it has
(a) low coercivity
(b) low retentivity
(c) low hysteresis loss
(d) high coercivity
Ans: c

20. Conductance is analogous to
(a) permeance
(b) reluctance
(c) flux
(d) inductance
Ans: a

21. The property of a material which opposes the creation of magnetic flux in it is known as
(a) reluctivity
(b) magnetomotive force
(c) permeance
(d) reluctance
Ans: d

22. The unit of retentivity is
(a) weber
(b) weber/sq. m
(c) ampere turn/meter
(d) ampere turn
Ans: b

23. Reciprocal of reluctance is
(a) reluctivity
(b) permeance
(c) permeability
(d) susceptibility
Ans: b

24. While comparing magnetic and electric circuits, the flux of magnetic circuit is compared with which parameter of electrical circuit ?
(a) E.m.f.
(b) Current
(c) Current density
(d) Conductivity
Ans: b

25. The unit of reluctance is
(a) metre/henry
(b) henry/metre
(c) henry
(d) 1/henry
Ans: d

26. A ferrite core has less eddy current loss than an iron core because
(a) ferrites have high resistance
(b) ferrites are magnetic

(c) ferrites have low permeability
(d) ferrites have high hysteresis
Ans: a

27. Hysteresis loss least depends on
(a) volume of material
(b) frequency
(c) steinmetz coefficient of material
(d) ambient temperature
Ans: d

28. Laminated cores, in electrical machines, are used to reduce
(a) copper loss
(b) eddy current loss
(c) hysteresis loss
(d) all of the above
Ans: b