

1. The greater value of coefficient of coupling means
- Higher value of leakage flux
 - Lower value of leakage flux
 - It doesn't give any information of leakage flux
 - Lower value of magnetising flux
2. A 20KVA, 2200/220V, Single phase X-mer has following parameters.
- $r_1 = 10\Omega$; $r_2 = 0.10\Omega$; $\ell_1 = 40$ mH;
 $\ell_2 = 4 \times 10^{-4}$ H; $M = 10$ H, where 1 and 2 represents h.v. & l.v. windings.
- Circuit parameters referred to secondary & primary and secondary self-inductance is
- 0.2Ω ; 0.8 mH; 1 H; 100 H; 1 H
 - 0.2Ω ; 0.8 mH; 100 H; 1 H; 1 H
 - 0.2Ω ; 0.8 mH; 0.5 H; 50 H; 0.5 H
 - 0.2Ω ; 0.8 mH; 2 H; 100 H; 1 H
3. A 2000/1000/500V, 1- ϕ ; 3-wdg. X-mer is to be used as an auto x-mer, with supply voltage of 3000V. Two loads, one of 1050KVA at 3500V and other of 180KVA at 1000V, are to be energized from this auto x-mer output. The loads have same power factor; current drawn from mains is.....
4. A starter is to be designed for a 10KW, 250V shunt motor. $R_a = 0.15\Omega$; During starting the armature current does not exceed 20% of rated value and fall below rated value. The total resistance is
- 0.38Ω
 - 0.76Ω
 - 1.52Ω
 - 3.04Ω
5. A DC shunt generator have a shunt field resistance of 150Ω was generating normally at 1800rpm. Critical field resistance of machine is 180Ω . Due to some reason generator just failed to excite. The speed of generator is
- 1233.33 rpm
 - 1500 rpm
 - 1800 rpm
 - 2100 rpm
6. A 3- ϕ Induction Motor has 4-pole Y-connected stator winding runs on 50 Hz with 400V between the lines. Rotor resistance and standstill reactance per phase 0.4Ω and 3.6Ω respectively. The effective ratio of rotor to stator turns is 0.67. Neglect stator impedance. The maximum Torque is
- 141.5 Nm
 - 138.9 Nm
 - 127.6 Nm
 - 172.8 Nm
7. A 3- ϕ , Y-connected SRIM is fed from 400V, 50 Hz source stator to rotor effective turns ratio is 2. At a rotor speed of 1440 rpm. The rotor induced e.m.f. per phase is

8. If two induction motors A & B are identical except that air gap of motor A is 50% greater than that of B than,
- No load power factor of A will be better than B.
 - No load pf. of A is poor than B.
 - Core loss of A will be more than A.
 - Operating flux of A is smaller than B
9. The motor is fed through a feeder from 440V, 50 Hz mains. The feeder has an impedance of $(1.8 + j1.2)\Omega$ per phase. The max. Torque that motor can deliver and corresponding slip of terminal voltage is.
- 66.9 N-m; 1907 V; 0.195
 - 124.5 N.m; 330.3 V; 0.125
 - 104.8 N-m; 230 V; 0.08
 - 132 N-m; 210 V; 0.04
10. A 75 Kw; 440 V, 3- ϕ , 6-pole, 50 Hz WRIM has a full-load slip of 0.04 and a slip at T_{max} of 0.2; when operating at rated voltage and frequency with rotor winding Short-circuited at slip-rings. Neglecting stator resistance and rotational losses to be negligible. The maximum torque is :
- 1940 N-m
 - 746 N-m
 - 1243 N-m
 - 1352 N-m
11. A 3300 V Y-connected synchronous motor works at constant terminal voltage and constant excitation. If syn. Impedance $(1 + j10)\Omega$ per phase. It operates at p.f. of 0.8 lead when taking 660 Kw from mains. The p.f. when input increased to 900 Kw.
- 0.79
 - 0.86
 - 0.71
 - 0.89
12. A 750 Kw, 11 Kv, 3- ϕ Y connected syn. motor has a syn. reactance of 35Ω /phase and negligible reactance. The excitation emf per phase when motor is operating on full load at 0.8 pf leading and efficiency under this condition is 93%
- 11000 V
 - 7507 V
 - 7607.5 V
 - 8064 V
13. A salient pole syn. Motor has $x_d = 0.85$ p.u., $x_q = 0.55$ p.u. connected to busbars of 1 p.u voltage while its excitation is adjusted to 1.2 p.u. Calculate output P_{max} . The motor can supply without loss of synchronism. Compute the minimum p.u excitation that is necessary for the machine to stay in syn. while supplying the full load torque (i.e.

10 P.u. power)

- (a) 0.705 (b) 0.805
(c) 0.905 (d) 0.955

14. A salient pole syn. motor is running clockwise at no load. If its field current is reduced to zero & then reversed.

- (a) motor would stop
(b) Run in reverse direction
(c) Rotor slips by one pole pitch & continuous running at syn. speed
(d) Rotor slips by one pole pitch & continuous running at $N < N_s$

15. In 1 - ϕ Induction motor, the impedance of MW & AW are $(7 + j3)$ $(3 + j5)$ respectively. Value of capacitor in μF connected in series with AW for 90° phase difference is