Exp-10

Group 1 { 2022EEB1207
2022EEB1201
2022EEB1192

Aim :- To perform no-load, blocked rotor and load tests on 1-phase induction motor & determine the parameters for the equivalent circuit.

- compute the performance of motor from the parameters and compare with experimental results.

Equipment Required

S.No	Name of Equipment	Rating	Type	Quant.
1.	Single phase induction motor	1440 rpm 1.5 KW 180/240V 10.5 Amp	AC	1
2.	DC Machine (as a generator)	1500 rpm 2 KW, Armature 220V, 9 Amp Field → 220V, 0.7 A	DC	1
3.	Single phase Auto transformer	I/P - 240V O/P - 0-270V	AC	1
4.	Rheostat	500 Ω, 2A		1
5.	Ammeter	10 Amp 10 Amp 2 Amp	AC	1
6.	voltmeter	250V 250 V	AC AL	1 1
7.	Wattmeter	150/300/600V 10/20 Amp 150/300/600V; 5/10 Amp	UPF LPF	1 1

Abdul Aj 01/4/24

Blocked Rotor test

Rated I = 10.4

$R_{ac} = 0.8\Omega$

$R_{dc} = 1.3\Omega$

S.No.	E_s	I_s	P_s (MF = 2)
1.	42	10.4	110

No Load test:—

S.No.	E_o	I_o	P_o (MF = 4)
1.	230	6.4	200
2.	220	5.4	176
3.	210	4.8	156
4.	200	4.4	136
5.	190	4	124
6.	180	3.6	112
7.	170	3.3	100
8.	160	3.1	92
9.	150	2.7	82

LOAD test rated volt(motor) = 210V

S.No	I/P AC power	I/P AC current	DC gen current	DC gen voltage	Speed
1.	100	5.1	1.	200	1500
2.	200	5.5	2	200	1496
3.	300	6	3	198	1491
4.	380	6.6	3.9	192	1487
5.	470	7.2	4.7	190	1483
6.	540	7.7	5.6	183	1479
7.	610	8.3	6.4	180	1474
8.	680	8.7	7.0	178	1470
9.	740	9.2	7.6	170	1470
10.	780	9.5	8.4	168	1467