

## Assignment

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1. A shunt generator delivers 450 A at 230 V and the resistance of the shunt field and armature are 50 ohm and 0.3 respectively. Calculate the generated e. m. f.
2. A short shunt compound generator delivers a load current of 30A at 220 V and has armature, series-field and shunt field resistances of 0.05 ohm, 0.30 ohm and 200 ohm respectively. Calculate the induced emf and the armature current. Allow 1 V per brush for contact drop.
3. A shunt generator delivers 20A to 10 ohm load resistance. If the resistance of the shunt field is 50 Ohm and armature resistance is 0.5 Ohm , calculate the generated emf.
4. A 4- pole, long - shunt lap-wound generator supplies 25KW at a terminal voltage of 500 V. The armature resistance is 0.03 Ohm, series field resistance is 0.04 Ohm and shunt field resistance is 200 Ohm. The brush drop may be taken as 1.0 V. Determine the emf generated . Calculate also the No. of conductors if the speed is 1200 rpm and flux per pole is 0.02 weber.
5. A 220V shunt connected DC machine has armature resistance of 0.05 Ohm and shunt field resistance of 110 Ohm. If the full load line current is 20A, Find the induced emf when the machine works as generator and motor.
6. A 4 pole, lap- wound, long - shunt, DC compound generator has useful flux per pole of 0.07 Wb. The armature winding consists of 220 turns and the resistance per turn is 0.004 Ohms. Calculate the terminal voltage if the resistance of shunt and series field are 100 Ohms and 0.02 Ohms respectively; when the generator is running at 900 rpm with armature current of 50A. Also calculate the power output in kw for the generator.

