Mansoura University
Faculty of Engineering
Dept. of Electrical Engineering

MTE&BME Programs
Electrical Power
Course Code: FCR141

Time Allowed: 30 minutes   *Total Marks: 10 Mark*

Mid Term Exam, April 4th , 2018

الاسم : ....   المجموعة: ....   البرنامج:.........................

1- أكمل الجدول التالى:

	المحطة النووية	المحطة الهيدروليكية
مكونات المحطة		
نظرية العمل		
المميزات		
العيوب		

2- A 100 MW steam station uses coal of calorific value 6400 kcal/kg. Overall efficiency of the station is 28 %. Calculate the coal consumption per 10 hours when the station is delivering its half rated output.

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1) Explain (with a diagram) the construction of a dc machine and the function of each part.

2) A series-connected dc motor has an armature resistance of 0.4Ω and field winding resistance of 1.4Ω. In driving a certain load, where the output shaft power and output shaft torque are 3450W and 27Nm respectively, from a voltage source of V = 220V. The efficiency of this motor is 80 %. Find (i) the motor current, (ii) the speed (iii) power developed and (iv) the rotational loss.

3) A stepper motor has a step angle of 2.5°, determine (i) resolution (ii) number of steps required for the shaft to make 20 revolutions (iii) shaft speed, if the stepping frequency is 3600 pps.