**SINCET**

**Department of Mechanical Engineering**

**ME 6601 Design of transmission system cycle test -II iii mech 04-04-16 marks 50**

**part-a (MARKS 5X2=10)**

.1.Define: Miter gear & Crown gear.

2. What are zero bevel gears?

3. What is irreversibility in worm gears?

4. What situation demands the use of gear box?

5. State any three basic rules followed in designing a gear box

**part-b**

6. Design the headstock gear box of a lathe having nine spindle speeds ranging from 25 to 1000 rpm. The power of the machine may be taken as 6 kW and speed of the motor is 1450 rpm. Minimum number of teeth on the gear is to be 25. a) Draw the speed diagram b) Sketch the layout of the gear box. c) Calculate the number of teeth on all gears.(**16 Marks)**

7. Design a worm gear drive to transmit 22.5 kW at a worm speed of 1440 rpm. Velocity ratio is 24:1. An efficiency of at least 85% is desired. The temperature rise should be restricted to 40O C. Determine the required cooling area. **(14 Marks)**

8. Write the procedure for bevel gear design lewis equation. **(10 Marks)**

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