EIC-161

B.E. VIIIth Semester (CGPA)Examination, 2020

Mech. Engg.

Paper - M - 802

Theory & Design of Machine-II

[Maximum Marks : 60

Note :- All questions from each section carry equal marks. All questions are compulsory and answer limit are approximately 250 words. Start the answer of each section from new page. Maximum limit of pages of answer booklet are approximately 16 pages. Answer should be written by the student in his/her own handwriting mandatory. The first page of answersheet should be download by the student from university website www.bubhopal.ac.in is mandatory.

1. (a) Explain the term : piston skrit and piston scuffing.

(b) Design a cast iron piston for a single acting 4-storke engine for the following sepcifications :

Cylinder bore = 100 mm, Stroke = 120 mm, Maximum gas pressure = 5 N/mm^2, break mean effective pressure = 0.65 N/mm^2, fuel consumption = 0.227 kg/kw/hr, speed = 2200 rpm.

Also draw full scale dimensioned drawing

2. (a) What are laws of wear and explain the factor affecting wear rate.

(b) What are the factor affecting wear ? How wear is measured.

3. (a) Explain summerfied number and bearing modulus.

(b) A 150 mm diameter shafts upporting a load of 10 KN has a speed of 1500 rpm. The shaft run in a bearing whose length is 1.5 times the shaft diameter, if the diameter chlearance of the bearing is 0.15 mm and the absolute viscosity of the oil at the operating temperature is 0.011 kg/m-s. Find the power wasted in friction.

4. (a) Write short notes on selection of gear material.

(b) A C.1 bevel gear has a module of 2.5 mm and its pitch diameter is 0.6 m, the pitch angle is 30^0 and the teeth are 20^0 full depth. Determine the permissible endurance load.

5. Write a short notes :-

(a) Types of lubrication system.

(b) 'Lewis' equation.

(c) Mechanism of "Abrastive and Adhesive wear".

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