

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

School of University Polytechnic

Diploma in Mechanical Engineering
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem V - N1DL501T - Machine DesignGeneral Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Explain the square thread. K1 (2)
- 2) Demonstrate the general design considerations K2 (4)
- 3) Explain the factors to be considered for selection of materials for the design of machine elements? K2 (6)
- 4) Identify the advantages of welded joint. K3 (9)
- 5) Develop a circumferential lap joints and Describe the procedure for designing. K3 (9)
- 6) Explain the classification of butt joints based on number of cover plates of riveted joints. K5 (10)
- 7) Distinguish clearly amongst cast iron, wrought iron and steel regarding their constituents and properties K4 (12)
- 8) Determine the dimensions of a flanged joint for a cast iron pipe 250 mm diameter to carry a pressure of 0.7 N/mm² K5 (15)
- 9) Two plates of 10 mm thickness each are to be joined by means of a single riveted double strap butt joint. Determine the rivet diameter, rivet pitch, strap thickness and efficiency of the joint. Take the working stresses in tension and shearing as 80 MPa and 60 MPa respectively K5 (15)
- 10) Discuss the design procedure of riveted joint. K6 (18)