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Examination: [2017 SUMMER](#)

Que.No	Question/Problem	marks
Q 1b)(i)	What are the factors to be considered for selection of materials for design of machine elements?	6
Q 1 I)	What is factor of safety? State its importance in design of machine elements.	8
Q 2c)(ii)	Explain the following types of stresses a) Transverse shear stress b) Compressive stress c) Torsional shear stress	8
Q 4a)(i)	(i) Give the composition of : 1) 35Mn 2 Mo28 2) 30Ni 4 CrI and 3) 25 Cr 3 Mo 55	4
Q 4b)(ii)	Explain the importance of Aesthetic considerations in design by giving any two examples.	6

Examination: [2017 WINTER](#)

Que.No	Question/Problem	marks
Q 1 a)	Define machine design.	2
Q 1 b)	Give the composition of	2
Q 1b)(ii)	2) Define : a) Ductility b) Toughness c) Creep	8
Q 1 c)	State four types of loads acting on machine elements	2
Q 1 d)	What do you mean by creep?	2
Q 1 e)	Define Ergonomics.	2
Q 1 n)	Draw stress - strain diagram for brittle material.	2
Q 2 b)	State the theories of elastic failure. Explain maximum normal stress theory and maximum shear stress theory with equations.	8
Q 2c)(i)	(i) State and describe in brief about four ergonomic considerations in the designing of machine elements.	8

Que.No	Question/Problem	marks
Q 3a)(i)	Explain with neat sketches only (i) Methods of reducing stress concentration in cylindrical members with shoulders.	4
Q 3 c)	Define stress concentration. What are the causes of stress concentration? State any four methods of reducing stress concentration with neat sketches.	8
Q 6b)(i)	Identify the material and its composition	8

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Que.No	Question/Problem	marks
Q 1b)(i)	What is stress concentration ? State the remedial measures to control the effect of stress concentration with neat sketches	6
Q 1 i)	Draw stress-strain diagram for ductile material stating salient points	4
Q 2a)(i)	State any four factors that govern 'factor of safety'.	8
Q 3 a)	State any four advantages of standardization.	4
Q 4a)(i)	Define Endurance limit and draw typical S-N curve for steel.	4
Q 4b)(i)	Describe the importance of aesthetic considerations in design related to shape, colour and surface finish.	6

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Que.No	Question/Problem	marks
Q 1a)(i)	What is stress concentration? State its significance in design of machine elements	4
Q 1b)(i)	State and explain main considerations in machine design.	6
Q 2c)(i)	State applications of maximum shear stress theory and principal normal stress theory	8
Q 3 a)	State the composition of the materials 30 Ni 16 Cr5, 40Cr8, FeE230 X15Cr25Ni 12	4
Q 4a)(i)	State four examples of ergonomic considerations in the design of a lathe machine.	4
Q 4b)(ii)	Draw S-N curve. Explain the concept of endurance limit and its need in design of machine elements	6

Examination: [2015 WINTER](#)

Que.No	Question/Problem	marks
Q 1a)(I)	What are the steps involved in general design procedure? Explain.	4
Q 1a)(I)	What is stress concentration? Explain any four methods to reduce it.	6
Q 2c)(i)	Explain with neat sketch the stress-strain diagram for ductile material.	8
Q 3 a)	State the composition of following materials.....	4
Q 4a)(I)	State the meaning of following colour codes in aesthetic consideration while designing the product:.....	4
