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Examination: 2017 SUMMER

Que.No	Question/Problem	marks
Q 4a)(ii)	Define following terms with respect to springs : 1) Free length 2) Solid height 3) Spring rate 4) Spring index	4
Q 5b)(i)	(i) The extension springs are in considerably less use than compression springs. Why?	8
Q 6 b)	A helical valve spring is to be designed for an operating load range of approximately 135 N. The deflection of the spring for the load range is 7.5 mm. Assume spring index of 10. Permissible shear stress for the material of the spring = 480 MPa and its mo	4

Examination: 2017 WINTER

Que.No	Question/Problem	marks
Q 4 b)	A helical compeersion imperssion speraing	8
Q 6c)(i)	Application of spring:	4

Examination: 2016 SUMMER

Que.No	Question/Problem	marks
Q 4a)(iii)	State any four applications of spring.	4
Q 5 b)	A railway wagon having 1500 kg mass and moving at 1 m/s velocity dashes against a bumper consisting of two helical springs of spring index 6. The springs, which get compressed by 150 mm while resisting a dash made of spring steel having allowable shear st	8
Q 6)	Draw a neat sketch of leaf spring of semi-elliptical type and name its parts.	4

Examination: 2016 WINTER

Que.No	Question/Problem	marks
Q 4a)(ii)	Write the equation with Wahl's factor, used for design of helical coil spring. State the SI unit of each term in the equation	4
Q 5 b)	Design a helical compression spring with ground ends. The spring index is 12. Maximum load on the spring is 100N and deflection under maximum load is 15 mm. Allowable shear stress of the material is 100 MPa and modulus of rigidity is 4 MPa. Find wire and	8
Q 6 b)	State two applications of leaf spring. Draw neat sketch of leaf spring	4

Examination: 2015 WINTER

Que.No	Question/Problem	marks
Q 4a)(ii)	Define the following terms with respect to springs..............	4
Q 5 b)	A safety valve of 60 mm diameter is to blow off at a pressure of 1.2 N/mm2.	8
Q 6 b)	A semi-elliptical carriage spring of 1200 mm length withstands a load of 60 kN.......	8