

Test # 3 - Section XBG

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Design a wheelchair for the disabled.

For the above mentioned design problem statement, identify only **3 realistic constraints** and **4 objectives**. For each objective write an associated metric to measure its achievement. Make sure that there is no repetition in any of your answers. Each correct item will get 0.5 point, totaling 5.5 points, i.e. there is a bonus of 0.5 point.



Items		Student's answer	Marks
Constraints	1	The cost of the wheelchair must be not exceed 1200 SR .	0.5
	2	The wheelchair must be made from a strong, good and a High quality material, contain a handle and four wheels to move it easily. The first part is objective. The second part is a must and cannot be a constraint.	0.1
	3	The wheelchair must be bear the range of the weight from 50 Kg to 200 Kg. Specify the maximum value only.	0.5
Objectives	Objective-1	The wheelchair should be durable.	0.5
	Metric	It should last at least for 8 years. If the lifetime of the wheelchair is 8 years it will be get 10 out of 10, if the lifetime of the wheelchair is 5 years it will be get 5 out of 10 and if the lifetime of the wheelchair is 2 years it will be get 0 out of 10.	0.5
	Objective-2	The material of the cover of the chair should be comfortable.	0.5
	Metric	If the material of the cover of the chair is comfortable and convenient it will be get 10 out of 10, if the material of the cover is not more comfortable and there is some mistake in it will be get 5 out of 10 and if the material of the cover is annoying in the stay and not comfortable it will be get 0 out of 10.	0.5

	Objective-3	The wheelchair should be easy to be used.	0.5
	Metric	If the wheelchair is user friendly it will be get 10 out of 10, if there some difficult in use it will get 3 out of 10 and If the wheelchair is not user friendly and complex it will get 0 out of 10.	0.5
	Objective-4	The safety system, the wheelchair should be containing a break and buzzer.	0.5
	Metric	If the wheelchair contain a break and buzzer to move in the street and crowded places by people in safety it will get 10 out of 10, if the wheelchair contain one of them it will get 3 out of 10 if the wheelchair does not contain a break and a buzzer it will get 0 out of 10.	0.5