



Quiz # 2 - Section XBG – Team # 7 - Grade = 2.6

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"Forms, Functions & Means"

Engineering design starts by basic issues. These include

- Form of the product, i.e. how it will look like and the shapes that it may have.*
- Functions supposed to be performed by the artifact being designed.*
- Means used such that the artifact designed can perform the desired functions stated earlier in (b). Each item in (c) should correspond to (b) respectively.*

Specify only 5 forms, 5 functions and 5 means in your design of a bike. Make sure no items are repeated in any of the parts.

Be creative. Each correct answer will get 0.2 points out of 3.

Forms: (1.0)

a1) A bike for kids designed in a suitable size for children and appropriate breaks , and having 4 wheels (two big primary wheels, and two supporting wheels) (0.2)

a2) A colourful structure (handle bar, seats, basket, bike skeleton in bright colours) to make the bike easy to spot and attractive for the child. (0.2)

a3) A comfortable wide cushioned seat with back support to ensure child comfort(0.2)

a4) A loud buzzer to protect them from accidents and to keep the child entertained (0.2) close to being "means"

a5) A front and back basket for putting the child's bags, food or other necessities, and a convertible upper shelter to protect the child from sun and rain. (0.2)



Functions: (0.8)

- b1) Safety of the children (0.2)
- b2) Easy to be moved on different surfaces (0.2)
- b3) Comfortable and convenience to sit on and stands up to 30 kg (0.2)
- b4) It could be monitored in addition to the buzzer (0.0) rather a "form"
- b5) Basket can carry up to 5 kg without letting the objects fall while driving (0.2)

Means: (0.8)

- c1) It has a height of 110 cm to 120 cm (0.0) rather a "form"
- c2) A wheel that stand friction (0.2)
- c3) The seat is made of a spongy substance and covered in leather (0.0)
- c4) Contains a tracking device such as GPS to not lose the child and a metal buzzer that is in an approachable place for the child to easily ring it (0.2)
- c5) The basket is made of strong plastic or wired steal that can be exposed to sunlight and has a diameter and depth of 30 cm (0.2)