BE/Sem VII/CBSGS/AUTO/PD&D/12-12-2017

Q. P. Code: 26095

(03 Hours) Max Marks: 80

N.B.: 1) Question **No.1** is compulsory.
2) Attempt **any three** questions out of remaining five questions.
3) Assume suitable data if necessary.
4) Figures to the right indicate full marks.

Q.1 **Explain the following (Any four)**

i) Anthropometry **05**

ii) Reverse Engineering **05**

iii) Design for Environment **05**

iv) Simultaneous Engineering Approach **05**

v) Patents and IP acts **05**

Q.2 **(a)** Define value of a product. Explain various steps involved in value analysis with an example of your choice. **(10)**

(b) What are the different factors and general rules considered for Design for Manufacturing (DFM) in case of sheet metal process? Explain. **(10)**

Q.3 **(a)** Explain 7 phases of Morphology of design with an example. **(10)**

(b) How Design of Experiment (DOE) helps in Robust Design of new product or process development. **(05)**

(c) Describe different elements of product costing with example. **(05)**

Q.4 **(a)** Explain product FMEA with appropriate example. **(10)**

(b) Explain simple Man Machine Interaction in Ergonomics with help of Block Diagram. **(05)**

(c) What is Industrial product design? Explain in brief. **(05)**

Q.5 **(a)** What are various physiological and psychological considerations in ergonomics? Explain. **(10)**

(b) What is Taguchi's loss function? Explain its importance in product design. **(05)**

(c) Explain various stages of product life cycle management. **(05)**

Q.6 **(a)** What is QFD? Explain the importance of quality house in Product Design with the help of Example. **(10)**

(b) What is Product Architecture? Explain its types with their applicability. **(10)**

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