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Code No. : 18521 A

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Mech. Engg.) VIII-Semester Main & Backlog Examinations, June-2022

Product Design and Process Planning (PE-V)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Compare product innovation with invention.	2	1	1	1
2.	List the objectives of a new product design.	2	1	1	1
3.	List the different design laws of appearance of a product.	2	1	2	1
4.	What are the sources of information for collecting Ideas?	2	1	2	1
5.	What are the benefits of Intellectual property?	2	1	3	1
6.	What is meant by tangible and intangible property and give one example in each case?	2	1	3	1
7.	Distinguish between market pull and technology push.	2	2	4	1
8.	Compare the role of product designer and product developer.	2	2	4	1
9.	What are the uses of process sheet?	2	1	5	1
10.	What is the role of process planning in the manufacturing of a new product?	2	1	5	1
<i>Part-B (5 × 8 = 40 Marks)</i>					
11. a)	Discuss the factors to be considered in new product design.	4	4	1	1
b)	Explain the detailed procedure involved in Delphi techniques.	4	2	1	1
12. a)	List and discuss various human factors involved in the new product design.	4	4	2	1
b)	Explain the different principles of Ergonomics.	4	4	2	1
13. a)	What are the rights of a patentee and explain the detailed procedure of patent registration process?	4	2	3	1
b)	Discuss the process involved in new product development.	4	3	3	1
14. a)	Explain the functional aspects and aesthetics aspects of a product design.	4	4	4	1
b)	Explain the Product life cycle with a suitable example.	4	4	4	1

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15. a)	Discuss the benefits of concurrent engineering.	4	2	5	1
b)	Explain the concept of Group Technology and its merits & applications.	4	4	5	1
16. a)	Explain the rules of Brain storming Techniques to be followed in the New Product design.	4	4	1	1
b)	Discuss any one technique used to short list the ideas in a product design.	4	4	2	1
17.	Answer any <i>two</i> of the following:				
a)	What are the inventions that are not patented?	4	2	3	1
b)	Explain the stages of product launch cycle.	4	2	4	1
c)	Discuss the different phases of value engineering.	4	4	5	1

M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	32.5%
iii)	Blooms Taxonomy Level -- 3 & 4	47.5%
