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Code No. : 22857

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD*Accredited by NAAC with A++ Grade***M.E. (Mech. Engg.) II-Semester Main Examinations, September-2022****Design for Manufacture and Assembly**

(Advanced Design & Manufacturing)

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.	List the steps in material selection based on property profile.	2	1	1	1
2.	What are the characteristics of cold finished steel?	2	1	1	1
3.	What are the advantages of fine blanked parts?	2	1	2	1
4.	What characteristics are needed for parts to be made by spinning?	2	1	2	1
5.	Which method of centerless grinding is preferred for (a) Tapered parts (b) Ring shaped parts (c) Cylindrical parts without heads (d) Stepped shaft	2	1	3	1
6.	For what kind of parts, ECM is a suitable process?	2	1	3	1
7.	What is the significance of parts made by thermo setting plastics?	2	1	4	1
8.	Name various types of Plastic welding?	2	1	4	1
9.	What factors affect the results of heat-treating process?	2	2	5	1
10.	List all the four considerations for minimizing the number of parts in an assembly.	2	2	5	1
Part-B (5 × 8 = 40 Marks)					
11. a)	Define shape factor and derive the shape factor in Elastic bending.	4	2	1	2
b)	Compare the design recommendations of hot rolled steel and cold finished steel.	4	3	1	2
12. a)	Explain the stages involved in blanking operation with neat sketches.	4	2	2	2
b)	List different characteristics of cold headed parts.	4	3	2	3
13. a)	Discuss the characteristics of Planer machined parts?	4	2	3	2
b)	What are the advantages of parts made by Die casting process?	4	2	3	2

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14. a)	Discuss the concept of Design for X?	4	3	4	3
b)	Compare the characteristics of thermo setting and thermo formed plastic parts.	4	3	4	3
15. a)	Discuss the design recommendations of soldered and brazed parts from the point of (a) Joint Design (b) Assembly	4	2	5	2
b)	Discuss the design recommendations of Resistance spot weldments.	4	3	5	2
16. a)	Discuss the principles of designing for economical production.	4	3	1	2
b)	What are the advantages of parts made by Electromagnetic forming process?	4	3	2	3
17.	Answer any <i>two</i> of the following:				
a)	Discuss the steps in the shell method of Investment casting process.	4	3	3	2
b)	Compare extrusion, injection and blow molding processes to manufacture hollow plastic parts.	4	4	4	3
c)	List all the benefits that come from design for assembly.	4	3	5	3

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

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	30%
iii)	Blooms Taxonomy Level – 3 & 4	50%
