BT MRE-III(R/S)-11-23-3008 Reg. No. | | | | | | | | |

C

B.Tech. Degree III Semester Regular/Supplementary Examination in Marine Engineering November 2023

19-208-303 PRODUCTION TECHNOLOGY

(2019 Scheme)

Time: 3 Hours Maximum Marks: 60

Course Outcome

On successful completion of the course, the students will be able to:

CO1: Understand the different Metal fabrication processes and their characteristics.

CO2: Understand the principle of working, specification, different types, and different operations performed in lathe and drilling machine.

CO3: Learn the principle of working, specification, different types, and different operations performed in shaping machines, milling and grinding machines.

CO4: Gain knowledge about the different measuring instruments and overhauling on board equipments.

CO5: Get the concept of the different welding methods.

Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 –Analyze, L5 – Evaluate, L6 – Create

PI – Programme Indicators

(Answer *ALL* questions) (5 × 15 = 75)

			Marks	BL	CO	PI
I.	(a)	Explain the various functions and classifications of the following tools with neat sketches. (i) Calipers (ii) Tri square (iii) Straight edge (iv) Vices	8	L2	1	1.2.1
	(b)	Explain the cutting forces, stresses and power while using a single point cutting tool for turning operation.	7	L2	1	1.2.1
		OR				
II.	(a)	Explain standard nomenclature of cutting tool with sketch.	8	L3	1	1.2.1
	(b)	What are the relationship between cutting speed, feed and machining time?	7	L1	1	1.2.1
III.	(a)	Describe turret and capstan lathes with sketches. What are their applications?	6	L2	2	1,2,1
	(b)	Explain turning, screw cutting and taper turning process done in a lathe machine.	9	L3	2	1.2.1
		OR				
IV.	(a)	What are the different types of lathe machines and their applications?	9	L2	2	1.2.1
	(b)	Explain twist drill nomenclature with a neat sketch.	6	L3	2	1.2.1
V.	(a)	Describe on the principle of jigs and fixtures.	5	L2	3	1.2.1
	(b)	Explain in detail all types of milling operations with relevant sketches.	10	L2	3	2.3.1
		OR				

(P.T.O.)

			Marks	BL	CO	PI
VI.	(a)	Describe on the following: (i) Difference between slotting machine and shaping machine. (ii) Reaming tool with a neat sketch.	6	L2	3	1.2.1
	(b)	(i) Describe the procedure of grinding wheel specifications with example. (ii) Differentiate between cylindrical and centerless grinding machines	9	L3	3	1.2.1
VII.	(a)	What is Least Count and how it is calculated?	4	L1	4	1.2.1
	(b)	Draw the sketch of a micrometer and explain how the measurement is done with it.	6	L2	4	1.2.1
	(c)	Explain how the alignment of driver and driven machine checked with a dial gauge.	5	L1	4	1.2.1
		OR				
VIII.	(a)	Define tolerance and explain why it is required.	4	L2	4	1.2.1
	(b)	What are the main safety hazards in a ship engine room and how it is mitigated?	4	L2	4	6.1.1
	(c)	Explain the working of pressure reducing valves (PRV) used in steam lines with sketch.	7	L1	4	1.2.1
IX.	(a)	What are the advantages and disadvantages of welding compared to other metal joining processes?	6	L2	5	1,2,1
	(b)	Describe on the followings: (i) Difference between soldering and brazing. (ii) Difference between reverse polarity and straight polarity in welding machine. (iii) Difference between arc welding and Electro Resistance Weldin	6	L3	5	1.2.1
	(c)	What are the uses of flux coating on electrodes?	3	L2	5	1.2.1
		OR				
X.	(a)	With the help of a neat sketch describe on various weld symbols.	6	L3	5	1.2.1
	(b)	Explain the following terms: (i) TIG welding. (ii) Types of welding joints. (iii) AC and DC welding and its merits and demerits.	9	L2	5	1.2.1

Bloom's Taxonomy Levels
L1-15.33%, L2-55.33%, L3-29.33%.

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