BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - IV Robotics & Automation Engineering : WINTER- 2022
SUBJECT : MANUFACTURING TECHNOLOGY-I

Day : Monday | Time : 02:30 PM-05:30 PM

Date : 28-11-2022 | W-24789-2022 | Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Use of non-programmable **CALCULATOR** is allowed.

Q.1 What is core, core box and core prints. Write difference between Green sand moulding and Dry sand moulding. **(10)**

OR

Q.1 Explain the various functions of a pattern? What are the common allowances provided to the patterns? **(10)**

Q.2 Parment mound casting will be used in the production of casting in small numbers or in large numbers? Give reasons in support your answer. **(10)**

OR

Q.2 Describe the various types of furnaces are used in a metal foundry. **(10)**

Q.3 a) Explain with the help of neat sketch a board hammer used for drop forging. **(05)**

b) What is press forging process. Explain rotary Swaging process and state its applications. **(05)**

OR

Q.3 a) Describe a three high rolling mill and state its advantages and disadvantages. **(05)**

b) Write various types of forging hammers. Explain "Impact Extrusion"? **(05)**

Q.4 Write the classification of presses. What is center of pressure? Elaborate how to locate center of pressure. How to determine percentage reduction? **(10)**

OR

Q.4 Find the total pressure dimensions of tools to produce a washer of 5.5 cm. Outer diameter with 2.5 cm diameter. Hole from a material of 4mm thickness, having shear strength of 350 N/mm^2. **(10)**

P.T.O.

Q.5 Derive the shear angle relationship based on merchant's minimum energy principle. Discuss its validity from the experimental observations. **(10)**

OR

Q.5 What is the principle of a lathe machine? How is the size of lathe specifical? Explain briefly with neat sketch the taper turning method involving swiveling of compound rest. **(10)**

Q.6 Explain briefly the construction and working of a radial drilling machine with emphasis on how the requisite motion are obtained. **(10)**

OR

Q.6 a) Find the indexing movement necessary for 73 divisions by compound index method. Use the following Brown and sharp index plates. **(05)**

Plate I- 15,16,17,18,19,20
Plate II- 21,23,27,29,31,33
Plate III- 37,39,41,43,47,49

b) Write classification of grinding machine. Explain centerless grinding machine and its advantages. **(05)**

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