**BBDNITM**

**MECHANICAL DEPARTMENT**

**SESSION (2018-19)**

**Subject- Manufacturing Science & Technology-II [ RME-503]**

**Assignment no. 2**

1) What is the difference between Capstan and Turret lathe? What are the standard and special tools used on these machines? How are these tools different to engine lathe tools?

2) What are the main differences between a shaper and a planer ? Discuss the different drive mechanisms used in shaper with the help of suitable diagram.

3) Discuss the various criteria used for optimizing the cutting conditions. A cylindrical bar is to be turned. The maximum allowable feed is 0.2 mm/revolution and at this feed rate Taylor's tool life equation for a tool-work combination is found to be VT0.25 = 75. The labor cost involved in each regrinding of the tool is Rs. 5.00. On the average, it takes about 2 minutes to change the tool. Find the cutting speed that will lead to maximum production rate. Derive the formula used.

4) What are the different horizontal boring machines?

5) Describe with a line diagram with worth quick return mechanism.

6) Describe various parts of Capstan and Turret lathe.

7) Discuss the difference between shaper and planer. Which are the drive mechanisms used in shaper? Discuss any one in brief with neat sketch.

8) Differentiate between Drilling, Reaming and Boring.

9) Discuss various operations performed on lathe machine.

10) What are the main differences between a shaper and a planer ? Discuss the different drive mechanisms used in shaper with the help of suitable diagram

11) What is the difference between Capstan and Turret lathe? What are the standard and special tools used on these machines? How are these tools different to engine lathe tools?

12) Estimate the machining time that will be required to finish a vertical flat surface of length 100 mm and depth 20 mm by an 8 teeth HSS end mill cutter of 32 mm diameter and 60 mm length in a milling machine. Assume, VC = 30 m/min, so = 0.12 mm/tooth

13) In a mild steel block, a flat surface of length 100 mm and width 60 mm has to be finished in a shaping machine in a single pass. How much machining time will be required if Ns = 80, so = 0.2 mm/stroke, A = O = 5 mm, QRR = 0.5.

14) How much machining time will be required to reduce the diameter of a cast iron rod from 120 mm to 116 mm over a length of 100 mm by turning using a carbide insert? Reasonably select values of VC and so.