

Quotations Bank
B.E. Sem VII -Mechanical Engineering
Production Technology

1.	Discuss different types of chips with suitable figure.
2.	Compare hobbing and shaping as production methods of spur gear in large quantities with neat sketch giving expected degree of accuracy and surface finish.
3.	Describe Ultrasonic Machining (USM) process with neat sketch. Discuss how the following factors effects the material removal rate of USM. (i) Grain Size (iv) Feed force (ii) Frequency (v) Hardness ratio (iii) Amplitude (vi) Abrasive concentration
4.	List the various types of locating devices used for both Jigs and Fixture and Explain any three of them with neat sketch.
5.	Draw neat schematic diagram of a sectioned view of a blanking die and punch assembly and label on it. Explain the function of (i) Die Block (ii) Punch (iii) Knock out.
6.	Draw neat sketch of chip formation in metal cutting and derive following relation for the shear angle (ϕ) $\phi = \tan^{-1} \left(\frac{r \cos \alpha}{1 - r \sin \alpha} \right)$ Where r = chip thickness ratio, α = tool rake angle
7.	With neat sketch explain different types of locaters.
8.	With neat sketch explain different types of clamping devices.
9.	What is a 3-2-1 principle?
10.	Calculate the different seeds available on spindle of a lathe and show them on 1 x 2 x 3 (cross) and 1 x 2 x 3 (open) ray diagram using following data: (1) Max spindle speed RPM = 166 (2) Min spindle speed RPM = 30 No of spindle speed = 6
11.	Describe principle of Electrical Discharge Machining (EDM) with figure and state its advantages, limitation and application.
12.	Explain single spindle automates and transfer machines with suitable example.
13.	How are unconventional machining methods classified? Compare LBM and EBM process with different factors which consider for classification of unconventional machining.
14.	Distinguish between a Jig and Fixture. Sketch different drill bushes useful in drill jigs.
15.	Determine the material utilization factor for producing 60 mm equilateral triangle blank from a 4 mm thick. Assume bridge allowance is 1.5T and the blanks are arranged in straight line as showing in figure 1. a = b

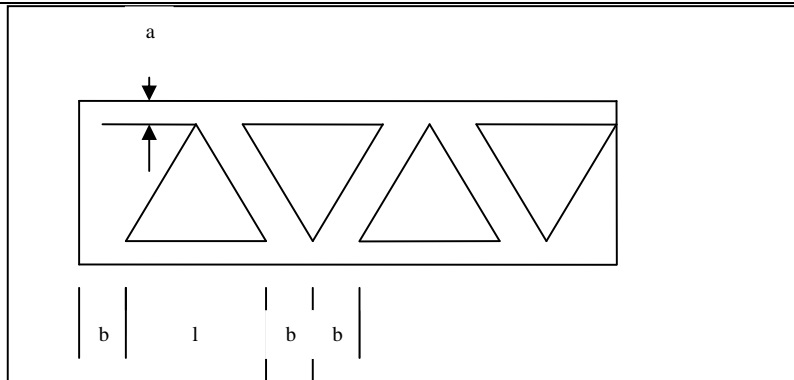


Figure 1.

16.	<p>Draw and discuss following clamping devices</p> <ul style="list-style-type: none"> (i) Hinged Clamp (ii) Quick Action Nut (iii) Hydraulic Clamp
17.	<p>Differentiate Between</p> <ul style="list-style-type: none"> (i) Capstan and Turret lathes (ii) Piercing and Blanking operation
18.	<p>Explain working principle of USM process.</p>
19.	<p>What is the laser beam machining?</p>
20.	<p>Discuss merchant theory of machining.</p>
21.	<p>Discuss following thread manufacturing methods with neat sketch (i) Chasing (ii) Rolling (iii) Tapping</p>
22.	<p>Draw neat sketch of single point cutting tool with label of six major angles and other terminology of it. Discuss essential characteristic and function of cutting fluids.</p>
23.	<p>Enlist different types of gears and draw gear tooth terminology. With appropriate example discuss plain indexing and compound indexing methods of manufacturing a gear on milling machine.</p>
24.	<p>The following observations were made during orthogonal turning of a mild steel tubing of 60 mm diameter on a lathe.</p> <ul style="list-style-type: none"> (2) Cutting speed24 m/min (3) Tool rake angle32° (4) Feed rate0.12 mm/rev (5) Tangential cutting force.....3000N (6) Feed force.....1200N (7) Length of continuous chip in one revolution...96 mm <p>Determine:</p> <ul style="list-style-type: none"> (i) Co-efficient of friction (ii) Shear plane angle (iii) Velocity of chip tool face (iv) Chip thickness
25.	<p>Describe types of material used for material cutting tools.</p>

26.	Compare solid and bit type cutting tools.
27.	Find co-efficient of friction and Shear plane angle for the following data during orthogonal turning of a steel tubing of 80 mm diameter on a lathe with cutting speed 20 m/min, tool rake angle 12° , feed rate 0.02 mm/rev, tangential cutting force 400kg, Feed force 100 kg, length of continuous chip in one revolution 80 mm.
28.	Discuss gear hobbing and gear shaping process.
29.	Draw merchant circle diagram for different forces during turning process.
30.	Draw neat diagram for punch and die block.
31.	Discuss function of different parts of punch and die block.
32.	Explain different types of bushes used in drill jigs.
33.	With suitable example explain material utilization factor for blanking operation.
34.	Differentiate between blanking and piercing?
35.	What is geometric progression ratio for gear box design?
36.	Explain working steps of single spindle automates with suitable example.