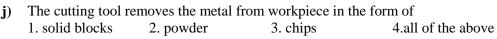
| Enrollm | nrollment No: Exam Seat No: C.U.SHAH UNIVERSITY Summer Examination-2019 | | | | | |
|------------|---|--|------|--|--|--|
| • | Code er: 4 | e : Manufacturing Process - I : 4TE04MPRI Branch: B.Tech (Mechanical) Date : 22/04/2019 Time : 02:30 To 05:30 Marks : 70 |) | | | |
| (2) (3) | Instru Draw | of Programmable calculator & any other electronic instrument is prohibited. Inctions written on main answer book are strictly to be obeyed. In neat diagrams and figures (if necessary) at right places. In the suitable data if needed. | | | | |
| Q-1 | | Attempt the following questions: | (14) | | | |
| | a) | The point at which the cutting tool reaches, beyond which it will not function satisfactorily until it is reground, is called as 1. tool wear 2. tool failure 3. tool diffusion 4. none of the above | | | | |
| | b) | Which cutting condition affects the cutting temperature predominantly? 1. depth of cut 2. cutting 3. feed 4. none of the above has any effect | | | | |
| | c) | speed on cutting temperature In metal cutting operation, maximum heat (i.e. 80-85%) is generated in 1. the shear zone 2. the chip-tool 3. the tool-work 4. none of the above interface zone interface zone | | | | |
| | d) | V-blocks (Vee locators) are used for clamping as well as locating when faces are inclined upto 1. 30° 2. 12° 3. 9° 4. 3° | | | | |
| | e) | Calculate the power required for machining of a workpiece on lathe having efficiency of 85% on full load, when tangential force required is 1200 N and cutting speed 195 m/min. 1. 4.59 kW 2. 275.29 W 3. 3.315 kW 4. insufficient data | | | | |
| | f) | Tool life in orthogonal cutting is 1. more than the 2. less than the 3. equal to the 4. cannot say tool life in tool life in tool life in oblique cutting oblique cutting | | | | |
| | g) | The productivity of honing operation is 1. less than the 2. more than the 3. equal to the 4. unpredictable productivity of productivity of productivity of lapping lapping operation lapping operation for the same | | | | |
| | h) | operation workpiece How is the workpiece fed off in down milling process? 1. In down milling process, the work 2. In down milling process, the piece is fed in the same direction as workpiece is fed in the opposite direction that of outtor's tongential value its. | | | | |
| | i) | that of cutter's tangential velocity as that of cutter's tangential velocity Calculate the cutting speed of drilling operation when diameter of drill is 10 mm and rotational speed of drill is 200 r.p.m. 1. 6.283 m/min 2. 3.142 m/min 3. 8.362 m/min 4. 10.216 m/min | | | | |



k) Continuous chips are formed during metal cutting operation due to
 1. ductile work
 2. large rake
 3. high cutting speed
 4. all of the above materials



| | 1) | Rough grinding process is commonly used for | |
|-------|---------------------------------|--|-------|
| | | 1. removing 2. cutting materials 3. producing 4. obtaining finer excess material that are too hard to be surfaces on parts to finish from casting machined by other higher dimensional | |
| | m) | conventional tools accuracy What is the motion of cutting tool and its cutting phenomenon in shaper machine? 1. Cutting tool 2. Cutting tool in 3. Cutting tool in 4. Cutting tool in in shaper machine has shaper machine shaper machine machine has a spinning motion has a reciprocating has a reciprocating | |
| | n) | spinning motion and it cuts in both motion and it cuts motion and it cuts and it cuts only the clockwise and only in forward only in backward in one direction anticlockwise direction of stroke of rotation Which of the following is not a part of carriage of the centre lathe? 1. Tool post 2. Apron 3. Compound rest 4. Gear box controls | |
| Atten | pt any | four questions from Q-2 to Q-8 | |
| Q-2 | a) b) | Attempt all questions Explain in brief basic elements of machine tools. How is the size of a Lathe determined? Explain the term 'Swing'. | (14) |
| Q-3 | a) b) | Attempt all questions How the Apron mechanism of a Lathe works? Explain with the help of a neat diagram. Explain Radial drilling machine with neat sketch. | (14) |
| 0.4 | D) | | (4.A) |
| Q-4 | a) b) | Attempt all questions Derive an expression to determine machining time on lathe. List the operations that can be carried out on a drilling machine. Explain any two with neat sketch. | (14) |
| Q-5 | a)b) | Attempt all questions A hole of 100 mm dia, is bored to 110 mm dia, in two passes with a feed of 0.3 mm/rev. The boring machine spindle revolves at 400 rpm. Find the depth of cut, feed per minute and cutting speed. How Cam milling operation is is done on a milling machine? | (14) |
| Q-6 | a) b) | Attempt all questions What are Form milling cutters? Where are they used? What are the types? List various Shaping machine attachments stating their uses. State difference between a Shaper, Planer and Slotter. | (14) |
| Q-7 | a) b) | Attempt all questions Describe the construction of a Vertical metal bandsaw machine. What is the use of cylindrical grinders? Explain the principle of cylindrical grinding. | (14) |
| Q-8 | a) b) | Attempt all questions What is a Power hacksaw? What are the reasons of using a cutting fluid in power metal sawing? What are natural and artificial abrasives? Why are the latter preferred over the | (14) |
| | | former? | |

