



Uva Wellassa University, Sri Lanka

B.Tech Degree Programme 2006/07

BSc in Computer Science Degree Programme 2006/07

End Semester Examination - Semester 2

June 2008

ENG 204-2 Engineering Workshop Technology

Answer Four (04) Questions only

Time: Two (02) Hours

Q1

- What is machining? Explain main draw backs of machining.
- With the help of a diagram explain the mechanism of chip formation.
- What are the types of chips produced in machining process? Explain the reasons for forming each type of chips.
- In a machining process, blue color chips were produced. Explain.

Q2

- Describe two operations can be carried out using a lathe machine.
- To reduce a mild steel rod with 1" diameter to $\frac{3}{4}$ " diameter, a carbide tool is used. If the rough cut speed and finishing cut speed for machining mild steel with carbide tool is 125m/min and 205m/min respectively, calculate the machine rpm values.
- If the available rpm values are 400,620,860,1400,2800,3400 and 4000, explain the operation briefly.

Q3

- Compare Gear drives with Belt drives
- What are the advantages and disadvantages of having helical gears in place of spur gears? Give suggestions to avoid those disadvantages.
- What are the reasons to use involute curve for gears.
- Module 2 cutter is used to machine a spur gear with 39 teeth using a milling machine. Starting from calculation of blank diameter explain the whole process of gear forming. The available index plate is with 35,49,55,68,73,89,99,117,128 holes.

Q4

- Describe the functionality of Tumbler mechanism of lathe machine.
- Explain the mechanism of moving the saddle of lathe using the motor it self.
- 1.25 mm pitch screw has to be machined using a lathe machine. The pitch of the lead screw of lathe machine is 6mm. the available gear wheels for lathe machine are 20,25,30,35,40,.....115,120. Calculate gear ratio between stud and lead screw.

Q5

Select five from the list and write down short notes.

- (a) Metal casting
- (b) Work holding devices
- (c) Safety at work shop
- (d) Dividing head
- (e) Gear classification
- (f) Marking tools
- (g) End Milling