Roll No.											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

TEST - 1

Even Semester: 2018-19 | **Date**: 05 March 2019

Course Code: MEC 204 | **Time**: 1 Hour

Course Name: Production Techniques-I | **Max Marks**: 40

Programme & Sem: B.Tech (MEC) & IV Sem | **Weightage**: 20%

Instructions:

(i) ***All the questions are compulsory***

Part A

Answer **all** the Questions. **Each** question carries **two** marks. (5Qx2M=10)

1. List the Types of Manufacturing Process
2. List variables to be considered for selection of Manufacturing Process.
3. Explain the types of cutting tools.
4. List the difference between Orthogonal Cutting and Oblique Cutting.
5. List the difference forms of tool wear.

Part B

Answer all the Questions. **Each** question carries **four** marks. (4Qx4M=16)

6. Write a note on Manufacturing Process and 5 M's.
7. Write a note on types of Production Systems.
8. With the help of a sketch explain the nomenclature of a single point cutting tool.
9. With the help of a sketch explain the Flank Wear and Crater Wear.

Part C

Answer all the Questions. **Each** question carries **seven** marks. (2Qx7M=14)

10. Derive an expression for Shear Plane Angle in terms of chip thickness ratio and rake angle.
11. In machining a mild steel work piece with carbide tool, the life of the tool was found to be 2 hours & 10 minutes at a spindle speed of 60 mt/min. Determine the tool life if it has to operate at a speed of 25% higher than the initial cutting speed. Also calculate the cutting speed if the tool is required to have a life of 2 hours & 50 minutes. Assume Taylors exponent as 0.30.

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TEST - 2

Even Semester: 2018-19 | **Date**: 15 April 2019

Course Code: MEC 204 | **Time**: 1 Hour

Course Name: Production Techniques-I | **Max Marks**: 40

Program & Sem: B.Tech & IV Sem | **Weightage**: 20%

Instructions:

(i) ***Answer all the questions***

(ii) ***Question paper consists of 3 parts***

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (5Qx4M=20)

1. Write briefly about truing and dressing of grinding wheel
2. Differentiate between up milling and down milling
3. Explain briefly about plain milling operation
4. List the specifications of a lathe machine
5. Write briefly about the working principle of a planer

Part B

Answer **both** the Questions. **Each** question carries **six** marks. (2Qx6M=12)

6. What are the desirable properties of abrasives? Explain
7. With a neat diagram explain the working of centreless grinding

Part C

Answer the Question. The Question carries **eight** marks. (1Qx8M=8)

8. Describe with a neat diagram, taper turning process by setting over the tailstock.

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END TERM FINAL EXAMINATION

Even Semester: 2018-19 | **Date**: 22 May 2019

Course Code: MEC 204 | **Time**: 3 Hours

Course Name: Production Technique 1 | **Max Marks**: 80

Program & Sem: B.Tech & 4th Sem | **Weightage**: 40%

Instructions:

(i) Answer the questions to the point.
(ii) All the questions must be answered, no choice is provided.
(iii) Scientific and non-programmable calculators are allowed.

Part A

Answer **all** the Questions. **Each** question carries **one** marks. (20QX1M=20M)

1.

(i) Continuous chip can form during the cutting of
a) Ductile materials. c) Brittle materials
b) Any material at low cutting speeds. d) Any material at high depth of cut

(ii) Discontinuous chip can form during the cutting of
a) Ductile materials. c) Brittle materials
b) Any material at low cutting speeds. d) Any material at high depth of cut

(iii) Built-up-edge can form during the cutting of
a) Soft materials at high cutting speeds
b) Brittle materials at low cutting speeds
c) Hard materials at low cutting speeds
d) Soft materials at low cutting speeds

(iv) Shear angle in orthogonal cutting is the angle between the
a) Flank face and the shear plane
b) Rake face and the shear plane
c) Flank face and the machined surface
d) Rake face and he machined surface

(v) Tool life criterion normally used for
a) Crater wear
b) Flank wear
c) Crater wear and Flank wear
d) Crater wear and Nose wear

(vi) Which of the following process is carried out to provide seating for head of screw?
a) Counter boring b) Counter sinking c) Tapping d) None

(vii) For lathe operations, work piece can be held
a) Between centers c) On mandrel
b) Either between centers or on mandrel d) None of the above

(viii) Slab milling can be performed more effectively by _____ milling machine.
a) Horizontal b) Vertical c) Can't say anything d) None of the above

(ix) Straddle milling can be performed more effectively by _____ milling machine.
a) Horizontal b) Vertical c) Can't say anything d) None of the above

(x) Cutting T-slots can be performed more effectively by _____ milling machine
a) Horizontal b) Vertical c) Can't say anything d) None of the above

(xi) For grinding nonferrous materials, the preferred abrasive is
a) Any type of work Silicon carbide c) Aluminum oxide
b) Diamond d) Cubic boron nitride

(xii) The grinding machine suitable for grinding cylindrical work pieces without actually fixing them in the machine
a) Cylindrical grinding machine c) Surface grinding machine
b) Centre less grinding machine d) Internal grinding machine

(xiii) A taper may be defined as uniform gradual ---------- along the length of the job
a) Decrease b) Increase c) Increase or Decrease d) None of the above

(xiv) The process of beveling sharp ends of a work piece is called as
a) Knurling b) Grooving c) Facing d) Chamfering

(xv) The process of chamfering the entrance of a drilled hole is known as
a) Counter-boring b) Counter-sinking c) Counter-fillet d) Trepanning

(xvi) Gang milling is used for
a) Large work pieces
b) b) Small work pieces
c) A number of milling cutters are used to cut simultaneously
d) d) Only one milling cutter is used to cut heavy work piece

(xvii) The machining operation used to enlarge an existing hole is termed as
a) Drilling b) Boring c) Counter sinking d) Reaming

(xviii) The operation to be used for obtaining smooth and close tolerance hole is
a) Drilling b) Reaming c) Tapping d) Gun drilling

(xix) Grinding is a process used for
a) Machining materials which are too hard for other machining processes
b) Close dimensional accuracy
c) High degree of surface smoothness
d) All the above

(xx) Among the conventional machining processes, the most efficient process is
a) Turning b) Grinding c) Drilling d) Milling

Part B

Answer **any five** Questions. **Each** question carries **six** marks. (5Qx6M=30M)

2. Explain in detail Orthogonal Cutting and oblique Cutting.
3. Explain in detail the types of chips.
4. With neat sketch explain crank and slotted lever mechanism in Shaper machine
5. With a neat sketch explain Abrasive jet Machining.
6. List the advantages and disadvantages of Water Jet Machining
7. Explain Recrystallization. List the factors affecting Recrystallization.
8. What are the advantages and disadvantages of metal Working Process?

Part C

Answer **any three** Questions. **Each** question carries **ten** marks. (3Qx10M=30)

9. Derive expressions for all the forces through Merchant cycle diagram.
10. With a neat sketch explain horizontal knee type milling machine.
11. List and explain any 5 Hand tools and accessories used for Forging Process.
12. With a schematic diagram explain Electron beam machining. List its advantages and disadvantages