



Roll No																			
---------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**PRESIDENCY UNIVERSITY
BENGALURU**

SCHOOL OF ENGINEERING

TEST 1

Winter Semester: 2021 - 22

Course Code: MEC2013

Course Name: Production Techniques

Program & Sem: B.Tech & IV Sem

Date: 25th April 2022

Time: 03.000 PM to 04.00 PM

Max Marks: 30

Weightage: 15%

Instructions:

(i) Read the all questions carefully and answer accordingly.

Part A [Memory Recall Questions]

Answer all the Questions. Each question carries ONE mark.

(5Qx 1M=5M)

Q.NO.1 _____ is well known as the expendable molding process.

a) Shell molding b) Hand molding c) Machine molding d) Core molding [1M] (CO1, Knowledge)

Q.NO.2 The patterns can be _____ after the pattern is prepared from shell molding.

a) Scrapped b) Non-reused c) Reused d) Recycled [1M] (CO1, Knowledge)

Q.NO.3 The binder used in the shell mold casting process is _____

a) Thermoplastic b) Thermosetting c) Plastic d) Elastic [1M] (CO1, Knowledge)

Q.NO.4 Which of the following is prepared using pattern is foundry?

a) Mould b) Sand c) Core d) Mould, Sand and Core [1M] (CO1, Knowledge)

Q.NO.5 Which of the following metal castings are used to make casting in the foundry?

a) Brass b) Aluminum c) Iron d) Brass, Aluminum and Iron [1M] (CO1, Knowledge)

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries FIVE marks.

(3Qx5M=15M)

Q.NO.6 Some accurate pattern can minimize the production cost of a product because of no further machining is required. Explain the following terminology of casting process. Flask, Pattern, Mould, Facing Sand, Vent holes, Pouring basin, Sprue, runner, gate, and riser with mould box sketch.

[5M] (CO1, Knowledge)

Q.NO.7 Moulding sands with poor refractoriness may burn when the molten metal is poured into the mould. Usually, sand moulds should be able to withstand up to 1650°C. Explain different Properties of Moulding sand which will resist casting defects.

[5M] (CO1, Comprehensive level)

Q.NO.8 The change in the pattern is due to when the cast solidifies, it shrinks at some limit due to metal shrinkage property at the time of cooling. Explain different Pattern allowances used in the casting process to avoid defects showing sketch. [5M] (CO1,Comprehensive level)

Part C [Problem Solving Questions]

Answer both the Questions. Each question carries FIVE marks. (2Qx5M=10M)

Q.NO.9 It is often used for small to medium parts that require high precision. Shell mould casting is used for both ferrous and non-ferrous metals. Explain with sketch the shell moulding process where the most commonly used are cast iron and alloy steel. [5M] (CO1,Comprehensive level)

Q.NO.10 Hot chamber die casting can be used with zinc, magnesium, and other low melting alloys using either our proprietary multi-slide or conventional toolin. with a neat sketch explain Goose neck hot chamber die casting. [5M] (CO1,Comprehensive level)



PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

TEST 2

Winter Semester: 2021 - 22

Course Code: MEC2013

Course Name: Production Techniques

Program & Sem: B.Tech & 4th Sem

Date: 31st May 2022

Time: 03.00 PM to 04.00 PM

Max Marks: 30

Weightage: 15%

Instructions:

(ii) Read the all questions carefully and answer accordingly.

Part A [Memory Recall Questions]

Answer all the Questions. Each question carries 1 mark.

(5Qx 1M=5M)

1. In most cases, where should we place the power source of welding? (CO2, Knowledge)
 - a) In a well-ventilated, uncluttered area
 - b) In an enclosed area
 - c) In the centre of the space
 - d) D corner of the space

2. Which of the following sources can result in hazardous chemical fumes when welding? (CO2, Knowledge)
 - a) Anti-spatter nozzle sprays
 - b) Chlorinated degreasing solvents
 - c) Inert shielding gases
 - d) None

3. Helium and argon are often used in welding. Which type of gas are they? (CO2, Knowledge)
 - a) Explosive gases
 - b) Ionized gases
 - c) Inert gases
 - d) Decompose gases

4. What do we call a metal deposit left on the material after a welding process? (CO2, Knowledge)
 - a) A crater
 - b) A puddle
 - c) A bead
 - d) None

5. Which of the following process is not the type of bulk forming process. (CO3, Knowledge)
 - a) Bending
 - b) Rolling
 - c) Forging
 - d) Extrusion

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries 5 marks.

(3Qx5M=15M)

6.SMAW is often used to *weld* carbon *steel*, low and high alloy *steel*, stainless *steel*, cast iron, and ductile iron. While less popular for nonferrous materials. With a neat sketch explain shielded metal arc Welding process. State its applications and limitations. (CO2, Knowledge)

Q7.Many welding process are used in industry out of which FSW works by using a non-consumable tool. With a neat sketch explain Friction stir Welding process. State its applications.

(CO2, Knowledge)

Q8.Extrusion is widely used in production of tubes and hollow pipes. Aluminum extrusion is used in structure work in many industries. This process is used to produce frames, doors, window etc. in automotive industries. With a neat sketch explain Direct and indirect extrusion process.

(CO3, comprehensive level)

Part C [Problem Solving Questions]

Answer both the Question. Each question carries 5 marks.

(2Qx5M=10M)

9.MIG welding is a versatile technique suitable for both thin sheet and thick section components. With a neat sketch explain Welding process in which consumable electrode is used with inert gas. State its advantages. (CO2,Comprehensive level)

10.Rod and wire products cover a very wide range of applications which include shafts for power transmission, machine and structural components. What are different types of Drawing process. With a neat sketch explain wire drawing and tube drawing process.

(CO3,Comprehensive level)



**PRESIDENCY UNIVERSITY
BENGALURU**

SCHOOL OF ENGINEERING

ENDTERM EXAMINATION

Winter Semester: 2021 - 22

Course Code: MEC2013

Course Name: Production Techniques

Program & Sem: B.Tech & IV Sem

Date: 28th June 2022

Time: 09:30 AM to 12:30 PM

Max Marks: 60

Weightage: 30%

Instructions:

(iii) Read the all questions carefully and answer accordingly.

Part A [Memory Recall Questions]

Answer all the Questions. Each question carries TWO marks.

(5Qx 2M=10M)

- Q1. Expendable mold and permanent mold are the parts of _____ manufacturing process
[2M] (CO1, Knowledge)
- a) Machining
b) Casting
c) Joining
d) None
- Q2. Which of the following is a finishing process
[2M] (CO2, Knowledge)
- a) Honing and welding
b) Polishing and lapping
c) Coating and milling
d) None
- Q3. Which of the following is a Permanent Joining process
[2M] (CO2, Knowledge)
- a) Welding
b) Soldering
c) Both a and b
d) None
- Q4. Which of the following is not included forming and shaping process
[2M] (CO3, Knowledge)
- a) Rolling
b) Forging
c) Broaching
d) Sheet metal forming
- Q5. The lathe carriage serves the following purpose of the tool
[2M] (CO4, Knowledge)
- a) Guiding
b) Feeding
c) Supporting
d) All of the above

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries EIGHT marks.

(4Qx8M=32M)

Q6. What are the requirements of good pattern material? Explain the characteristics of core and core sand and steps involved in core making. [8M] (CO1, Knowledge)

Q7. Many welding process are used in industry out of which MIG works by using a consumable tool. MIG welding is a versatile technique suitable for both thin sheet and thick section components. With a neat sketch explain Welding process in which consumable electrode is used with inert gas. State its advantages. [8M] (CO2, Comprehensive level)

Q8. Illustrate any 7 differences between hot working and cold working. With a neat sketch explain four stand continuous mill for an application of ferrous metals. [8M] (CO3, Comprehensive level)

Q9. Wire and Rod products cover a very wide range of applications which include shafts for power transmission, machine and structural components. With a neat sketch explain Tube drawing with fixed mandrel. State any 5 applications. [8M] (CO3, Comprehensive level)

Part C [Problem Solving Questions]

Answer both the Questions. Each question carries NINE marks.

(2Qx9M=18M)

Q10. Why a lathe machine is called a 'mother of machines'? Draw a neat sketch of lathe and explain any 6 different parts of lathe. [9M] (CO4, Comprehensive level)

Q11. Drilling is a material-removing or cutting process in which the tool uses a drill bit to cut a hole of circular cross-section in solid materials. With a neat sketch explain any 3 drilling operations. Find the time required for one full cut on a work piece of 350mm long and 60mm in diameter. The cutting speed is 35 meters per minute and the feed is 0.5mm per revolution.

[9M] (CO4, Application level)