SEMESTER: WINTER, SESSION: 2009-2010

Examination & Semester: B.Tech. II Semester (Common) (Section: A,B,C,G)
Subject: Manufacturing Process, MMC 12101

Instructions:
Attempt any two questions from Group A and all questions from Group B.

Time: 3 Hours
Max Marks: 100

	Group A (Answer any two)	
1(a)	What is closed mould in casting? Draw the schematic illustration of green sand closed mould?	(10)
1(b)	Why allowances are given in casting? Bring out the different types of allowances and explain their significance?	(10)
2(a)	What effect temperature has in metal working processes? Bring out the advantages and disadvantages of the different types of metal working process based on temperature?	(10)
2(b)	A link for a steel chain has to be fabricated. Write down the steps involved and the tools used in every step of fabrication?	(10)
3(a)	Explain the following terms used in sheet metal working a) Hemming b) Seaming c) Blanking d) Punching e) Trimming	(10)
3(b)	Write down minimum two functions of the following parts in the lathe machine a) Self centering chuck b) Collet c) Face plate d) Tail stock e) Carriage	(10)
	Group B (Answer all questions)	
4	What are the five major characteristics required for a cutting tool? Draw a single point cutting tool and mark the angles. What is the need for providing angles in a cutting tool?	(10)
5	Describe the reactions happening in oxyacetylene flame welding process. Explain the need for neutral, reducing and oxidizing flames.	(10)
6	Distinguish brazing & soldering of metals and give minimum 2 applications for the above processes. What is the role of flux used during the process?	(10)

SEMESTER: WINTER, SESSION: 2009-2010

Examination & Semester: B.Tech. II Semester (Common) (Section: A,B,C,G)
Subject: Manufacturing Process, MMC 12101

Instructions:
Attempt any two questions from Group A and all questions from Group B.

Time: 3 Hours
Max Marks: 100

	Group A (Answer any two)	
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3(a)	Explain the following terms used in sheet metal working a) Hemming b) Seaming c) Blanking d) Punching e) Trimming	(10)
3(b)	Write down minimum two functions of the following parts in the lathe machine a) Self centering chuck b) Collet c) Face plate d) Tail stock e) Carriage	(10)
	Group B (Answer all questions)	
4	What are the five major characteristics required for a cutting tool? Draw a single point cutting tool and mark the angles. What is the need for providing angles in a cutting tool?	(10)
5	Describe the reactions happening in oxyacetylene flame welding process. Explain the need for neutral, reducing and oxidizing flames.	(10)
6	Distinguish brazing & soldering of metals and give minimum 2 applications for the above processes. What is the role of flux used during the process?	(10)

Winter Semester Regular Examination 2012-13
Subject: Manufacturing Process: MMC 12101

B.Tech. II SEMESTER Group-A Common (Sec. A/B/C/D/E) Session: 2012-2013

Max. Marks: 100 Time: 3 hrs.

Instruction: Answer any *FOUR* questions from Group A, and *ALL* questions from Group B.

Group – A

1. Describe the "Dovetail" joint made in carpentry shop with neat sketch. Also write the name of tools will be required for making the joint. 10
2. Draw the cross section of a ready to pour sand mould and show the following casting elements: cope, drag, parting line, core print, dowel pin, runner, riser, gate, pouring basin and sprue. 10
3. Explain the following smithy operations (a) Upsetting, (b) Bending, (c) Fullering, (d) Swaging and (e) Forge welding. 10
4. Explain the use of following tools in fitting shop: (a) Vernier height gauge, (b) Reamer, (c) Taps (d) Caliper and (e) Wire gauge. 10
5. Explain the Shielded Metal Arc Welding (SMAW) process with neat sketch. Also name all the equipments and tools used in this process. 10
6. Write the name of at least ten parts of a centre lathe. Also states the functions of each. 10

Group – B

7. Write the name of three tools used in carpentry shop for the purpose of (a) Marking (b), Boring (c) Planning and (d) Holding. How a 'saw' can be specified during purchase from market? 4+4
8. What is seasoning of woods? Explain chemical seasoning process. Also states the importance of seasoning process. 7
9. Discuss the following casting defects with reasons: (a) Blow holes, (b) Scab, (c) Hot tear and (d) Wash. 8
10. Briefly describe the centrifugal casting process. Also states its advantages. 7
11. With a neat sketch show the nomenclature of a file. Also classify the files stating their uses. 8
12. Write the name of different types of Anvil, Hammer and Tongs are used in foundry shop. Also states their use. 7
13. Explain following terms related to gas welding process: (a) Neutral flame, oxidizing flame and carburizing flame, (b) Filler rod and shielding flux and (c) inner and outer envelope of the flame. 3+3 +2
14. States seven lathe operations. 7

Mid-semester Examination
MANUFACTURING PROCESS: SECTION – A, D & E

Time: 2 Hours **Full Marks: 60**

Answer all questions

1 Explain the following type of carpentry joint with neat sketch. Also state their applications.
(a) Half lap joint (b) Mortise and Tenon Joint 10

2 Draw the cross section of a ready to pour sand mould and show the following casting elements: cope, drag, parting line, core print, dowel pin, runner, riser, gate, pouring basin and sprue. 10

3 Discuss about two type of casting defects for each of the following categories: (a) gas defects, (b) Shrinkage cavities (c) Molding material defects (d) Pouring material defects and (e) Metallurgical defects 10

4(a) Make comparisons of hot working and cold working process. 5

4(b) Name at least 10 hand tools used in blacksmith's work. 5

5 Explain the following smithy operations: (i) punching and drifting (ii) fullering (iii) setting down (iv) swaging and (v) forge welding. 10

6(a) States the uses of following tools in fitting shop: (i) Bench vice, (ii) Pin vice, (iii) V block with U clamp, (iv) Surface plate and (v) Vernier height gauge. 5

6(b) What is seasoning of woods? Discuss any one seasoning process in brief. 5

SEMESTER: WINTER, SESSION: 2009-2010

Examination & Semester: B.Tech. II Semester (Common) (Section: A,B,C,G)
Subject: Manufacturing Process, MMC 12101

Instructions:
Attempt any two questions from Group A and all questions from Group B.

Time: 3 Hours
Max Marks: 100

	Group A (Answer any two)	
1(a)	What is closed mould in casting? Draw the schematic illustration of green sand closed mould?	(10)
1(b)	Why allowances are given in casting? Bring out the different types of allowances and explain their significance?	(10)
2(a)	What effect temperature has in metal working processes? Bring out the advantages and disadvantages of the different types of metal working process based on temperature?	(10)
2(b)	A link for a steel chain has to be fabricated. Write down the steps involved and the tools used in every step of fabrication?	(10)
3(a)	Explain the following terms used in sheet metal working a) Hemming b) Seaming c) Blanking d) Punching e) Trimming	(10)
3(b)	Write down minimum two functions of the following parts in the lathe machine a) Self centering chuck b) Collet c) Face plate d) Tail stock e) Carriage	(10)
	Group B (Answer all questions)	
4	What are the five major characteristics required for a cutting tool? Draw a single point cutting tool and mark the angles. What is the need for providing angles in a cutting tool?	(10)
5	Describe the reactions happening in oxyacetylene flame welding process. Explain the need for neutral, reducing and oxidizing flames.	(10)
6	Distinguish brazing & soldering of metals and give minimum 2 applications for the above processes. What is the role of flux used during the process?	(10)

SEMESTER: MONSOON, SESSION: 2011-2012

Examination & Semester: **I B.Tech. Semester (Common) (Sections F,G,H,I&J)** **Time: 3 Hours**

Subject: **Manufacturing Process (MMC 11102)** **Max Marks: 100**

Instructions: Attempt any two questions from Group I and all questions from Group II.

	GROUP – I (Answer any two questions)	
1.(a)	Describe the advantages, disadvantages and applications of Investment (Lost wax) casting, Permanent Die casting and Centrifugal casting.	10
1.(b)	Explain five types of defects in casting in broad category and five types of pattern allowances respectively.	10
2.(a)	Describe important types of forming processes in broad category and their applications.	10
2.(b)	Define welding process and three types of welding processes in broad category, their advantages, disadvantages and their applications	10
3.(a)	Write any seven material removal operations in the machine shop and their applications.	05
3.(b)	Explain tool nomenclature of a single point cutting tool along with neat sketches.	10
3.(c)	Write seven important parameters of the specification of a lathe machine	05
	GROUP – II (Answer all questions)	
4.	Make neat sketch of different layers of wood and describe their functions.	10
5.	Describe safety rules followed in welding, forging and machine shops.	10
6.	Define fitting process and describe different types of files used in fitting depending on Nos. of cuts and teeth as well as cross-sections	10
7.	Write seven types of fastening devices used in the workshop and their applications.	10
8.	Explain briefly different types of flames in Oxy-Acetylene gas welding and their applications.	10
9.	Make neat sketch of a Mechanical Vernier Micrometer indicating its different parts and derive its least count (1 micron).	10

Semester: *Monsoon* *Session: 2012-2013*

Examination & Semester: I B.Tech (Common) (F, G, H, I&J)

Subject: Manufacturing Process (MMC 11102) **Time: 3 Hours** Max. Marks: **100**

Instructions: Answer any two questions from Section I and all questions of Section II

Q.No.	Questions	Marks
	Section I *(Answer any two)*	
1.	Define the welding process and explain MMAW, TIG welding and Gas Cutting processes with their advantages and applications.	20
2.	(a) Define mould and explain the steps followed in sand casting process for the mould preparations with different technical terms used in the casting with neat sketch. (b) What is centrifugal casting? Explain with neat sketch and mention its applications.	10 10
3.	Classify any five different types of each linear and angular measuring instrument with their applications. Explain the function of Vernier Caliper in detail with neat sketch and write the formula for taking a reading.	20
	Section II *(Answer all)*	
4.	What is filing operation? Classify any five different types of files on the basis of TPI, No. of cut and cross sections with neat sketch.	10
5.	Explain ten different operations performed in the forging shop.	10
6.	What are the safety rules should be followed in the welding and the machine shop respectively.	10
7.	Explain the difference between hardwood and softwood.	10
8.	What are clamping tools (holding tools) used in the workshops? Explain different types of vices with neat sketches	10
9.	What is lathe? Explain the functions of head stock, tail stock, chuck, carriage and dead center with neat sketch.	10

Semester: *Monsoon* *Session: 2012*-2013

Examination & Semester: I B.Tech (Common) (F, G, H, I&J)

Subject: **Manufacturing Process (MMC 11102)** **Time: 3 Hours** Max. Marks: **100**

ructions: **Answer any two questions from Section I and all questions of Section II**

Q.No.	Questions	Marks
	Section I *(Answer any two)*	
1.	Define the welding process and explain MMAW, TIG welding and Gas Cutting processes with their advantages and applications.	20
2.	**(a)** Define mould and explain the steps followed in sand casting process for the mould preparations with different technical terms used in the casting with neat sketch.	10
	(b) What is centrifugal casting? Explain with neat sketch and mention its applications.	10
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SEMESTER: MONSOON/WINTER, SESSION: 2011-2012

EXAMINATION & SEMESTER: B.TECH. II SEMESTER

ct: MMC12101 MANUFACTURING PROCESS

Time: 3 Hours

Instruction: 1. Attempt any TWO questions from Part - I and ALL questions from Part - II.

2. Answer part of the question in sequential order at one place.

Marks: 100

No.	Part - I [ANSWER ANY TWO]	Marks
1	a) A 600 mm X 30 mm flat surface of a plate is to be finish machined on a shaper. The has been fixed with the 600 mm side along the tool travel direction. If the tool over travel at each end of the plate is 20 mm, average cutting speed is 8 m/min, feed rate is 0.3 mm/stroke and the ratio of return time to cutting time of the tool is 1:2. Calculate the time required to complete the job. b) A strip with cross section of 200 mm X 6 mm is being rolled with 20% reduction of the area, using 400 mm diameter steel rolls. Calculate the angle subtended by the deformation zone at the roll centre.	10+10
2	a) A shell of 100 mm dia. And 100 mm height with the corner radius of 0.4 mm is to be produced by cup drawing. Calculate the required blank diameter. b) GO and NO-GO plug gauges are to be designed for a hole $20^{+0.050}_{+0.010}$ mm. gauge tolerance can be taken as 10% of the hole tolerance. Calculate the Size of the gauge.	10+10
3	a) What is the Seasoning of wood? Briefly explain any one method. b) Write down the name of following carpentry tools: (i) Four marking and measuring tools (ii) Four types of saw (iii) Two types of chisel (iv) Two types of Planes (v) Two holding tools (vi) Three striking tools c) Describe the following carpentry joints with sketch i) Mortise and tenon joint ii) Dovetail joint	4+6+10

	Part - II [ANSWER ALL THE QUESTIONS]	
4.	In an interchangeable assembly, shaft of size $25^{-0.040}_{-0.010}$ mm mate with holes of size $25^{+0.020}_{+0.000}$ mm. Calculate the maximum possible clearance in the assembly.	10
5.	Explain the following forging operations with neat sketch: (i) Upsetting (ii) Fullering (iii) Setting down (iv) Bending v) Welding	5 X 2
6.	a) List the tools used in Smithy Shop. Also state their uses. b) Write five common defects in casting. Also state their cause and remedies.	5+5
7.	a) With a solidification factor of 0.97 X 10^6 s/m^2, determine the solidification time (in seconds) for a spherical casting of 200 mm diameter. b) Volume of a cube of side 'l' and volume of a sphere 'r' are equal. Both the cube and the sphere are solid and of same material. They are being cast. Calculate the ratio of the solidification time of the cube to the same of the sphere.	5+5
8.	a) For resistance spot welding of two 2.5 mm thick aluminium plates, 5500 A current was passed for 0.2 s. If the total resistance was 75 $\mu\Omega$ estimate the heat energy supplied for welding. If the resulting weld nugget has a volume of 50 mm^3 and the heat required for melting aluminium is 3J/mm^3, estimate the proportion of total heat consumed in spot welding. b) In a machining operation, doubling the cutting speed reduces the tool life to 1/8th part of the original value. Determine the exponent n in Taylor's tool life equation VT^n=C.	10
9.	Write short notes on following metal forming operations: i) Closed-die Forging ii) Cold Rolling iii) Extrusion iv) Wire Drawing v) Deep Drawing	5 X 2

SEMESTER: MONSOON, SESSION: 2011-2012

Examination & Semester: I B.Tech. Semester (Common) (Sections F,G,H,I&J) Time: 3 Hours

Subject: Manufacturing Process (MMC 11102) Max Marks: 100

Instructions: Attempt any two questions from Group I and all questions from Group II.

	GROUP – I (Answer any two questions)	
1.(a)	Describe the advantages, disadvantages and applications of Investment (Lost wax) casting, Permanent Die casting and Centrifugal casting.	10
1.(b)	Explain five types of defects in casting in broad category and five types of pattern allowances respectively.	10
2.(a)	Describe important types of forming processes in broad category and their applications.	10
2.(b)	Define welding process and three types of welding processes in broad category, their advantages, disadvantages and their applications	10
3.(a)	Write any seven material removal operations in the machine shop and their applications.	05
3.(b)	Explain tool nomenclature of a single point cutting tool along with neat sketches.	10
3.(c)	Write seven important parameters of the specification of a lathe machine	05
	GROUP – II (Answer all questions)	
4.	Make neat sketch of different layers of wood and describe their functions.	10
5.	Describe safety rules followed in welding, forging and machine shops.	10
6.	Define fitting process and describe different types of files used in fitting depending on Nos. of cuts and teeth as well as cross-sections	10
7.	Write seven types of fastening devices used in the workshop and their applications.	10
8.	Explain briefly different types of flames in Oxy-Acetylene gas welding and their applications.	10
9.	Make neat sketch of a Mechanical Vernier Micrometer indicating its different parts and derive its least count (1 micron).	10

SEMESTER: MONSOON, SESSION: 2011-2012

Examination & Semester: I B.Tech. Semester (Common) (Sections F,G,H,I&J) Time: 3 Hours

Subject: Manufacturing Process (MMC 11102) Max Marks: 100

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GROUP – II (Answer all questions)

	Make neat sketch of different layers of wood and describe their functions.	10
	Describe safety rules followed in welding, forging and machine shops.	
	Define fitting process and describe different types of files used in fitting depending on Nos. of cuts and teeth as well as cross-sections	
	Write seven types of fastening devices used in the workshop and their applications.	
	Explain briefly different types of flames in Oxy-Acetylene gas welding and their applications.	
	Make neat sketch of a Mechanical Vernier Micrometer indicating its different parts and derive its least count (1 micron).	