Chapter 1: Introduction to manufacturing processes	
1. Manufacturing engineering can be defined as _____	
The study of the various processes required to produce parts and to assemble them into machines and mechanisms.	The Study of design of various elements of machines.
The study of relative motion between various parts of a machine or mechanism.	The study of deformation of various materials under the action of forces.
2. Which of the following is the process used in manufacturing engineering?	
Casting	Forming
Machining	All the above
3. What is the output of Manufacturing?	
Design of Product	Finished Product
Raw Material	None of the above
4. When the molten metal is poured into a mould and allowed to solidify, this process is known as?	
Machining process	Joining process
Casting process	Forming process
5. When the material is plastically deformed under the action of an external force, to produce the required shape, this process is known as?	
Machining process	Joining process
Casting process	Forming process
6. When the material is removed form a work piece to get the final shape of the product, this process is known as?	
Machining process	Joining process
Casting process	Forming process
7. When two or more components are joined together to produce the required product, this process is known as?	
Machining process	Joining process
Casting process	Forming process
8. The study of manufacturing process helps in	
Cost saving	Time saving
Good productivity	All the above
9. Casting process is	
Metal joining process	Metal cutting process
Metal Shaping process	Metal finishing process
10. Which of the following is a metal shaping process?	
Rolling	Forging
Extrusion	All of above
11. Which of the following is not a metal shaping process?	
Casting	Rolling
Welding	Forging
12. Which of the following comes under the classification of metal shaping process?	
Embossing	Bending
Coining	All the above
13. Which of the following is a metal joining process?	
Welding	Turning
Polishing	Spinning
14. Which of the following is not a metal joining process?	

Welding	Brazing
Soldering	Drilling
15. Riveting is a _____ process.	
Metal shaping	Metal joining
Metal cutting	Metal finishing
16. Slotting, threading, grinding and reaming can be classified under _____ process.	
Metal shaping	Metal joining
Metal cutting	Metal finishing
17. Which of the following is a metal finishing process?	
Lapping	Welding
Turning	Reaming
18. What is difference between hobbing and honning process?	
Both are metal cutting process	Both are metal finishing process
Hobbing is metal cutting and honning is metal finishing process	Hobbing is metal finishing and honning is metal cutting process
19. Polishing, electroplating and metal spraying can be classified under _____process.	
Metal shaping	Metal joining
Metal cutting	Metal finishing
20. The study of behavior of metals under external force and temperature is called Mechanical properties of metal.	
t	F
21. The property of metal by virtue of which it can withstand or support an external force or load without rupture is called	
Ductility	Plasticity
Strength	Malleability
22. The property of metal by virtue of which it can be drawn into wires or elongated with the application of tensile force is called	
Ductility	Plasticity
Strength	Malleability
23. The property of metal by virtue of which it can be rolled or hammered into thin sheets without cracking is called	
Ductility	Plasticity
Strength	Malleability
24. The property of material by virtue of which it is able to resist wear, scratch and indentation is called	
Machinability	Hardness
Ductility	Malleability
25. Which of the following is used to test the hardness of material?	
Brinell hardness test	Rockwell hardness test
Vicker’s hardness test	All the above
26. Metal with high hardness has the ability to	
To get easily manufacture	To cut another metal
To easily wear out	None of above
27. The property of metal by which it can easily cut or removed by cutting tools in various operations is called	
Hardness	Ductility
Strength	Machinability

28. The ability of metal to change its shape with the application of external force is called	
Hardness	Deformation
Strength	Ductility
29. The property of metal by virtue of which it will fracture or break without any appreciable deformation is known as	
Ductility	Brittleness
Deformation	Malleability
30. The property of metal by virtue of which it can retain its original shape and size after removal of the load is called	
Plasticity	Malleability
Elasticity	Ductility
31. The stresses which are left even after the metal is processed is known as	
Lost Stress	Residual stress
Advance stress	Extra stress
32. Which of the following is the effect of residual stress in metal	
It improves corrosion resistance	Component can be twisted after machining
Propagate crack and twisting defects	All the above
33. The presence of residual stress may change the safe stress limit	
T	F
34. The presence of residual stress may	
Decreases the strength and life of metal	Increase the strength of metal
Increase the life of metal	It has no effect
35. The residual stress must be	
Kept as it is in component	Removed from component
Treated as per the choice of worker	None of above
36. The process by which distorted grains of cold worked metals are replaced by new strain free grains during heating above a specific minimum temperature is called	
Recrystallisation	Crystal deformation
Crystal effect	None of above
37. To remove the residual stress the metal is again heated below the recrystallisation temperature.	
T	F
38. If metal working is done on metal below its recrystallisation temperature than it is known as	
Cold working	Hot working
Casting	None of above
39. If metal working is done above recrystallisation temperature but below its melting point then it is known as	
Cold working	Hot working
Casting	None of above
40. Fine grain structure has	
Low recrystallisation temperature	High recrystallisation temperature
No recrystallisation temperature	None of above
41. Coarse grain structure has	
Low recrystallisation temperature	High recrystallisation temperature

No recrystallisation temperature	None of above
42. Presence of dissolved elements have _____ recrystallisation temperature than pure metal	
Low	High
No	None of above
43. If metal is heated at above recrystallisation temperature before being processed under hot working, we get	
High degree of plastic deformation	Lower degree of plastic deformation
No plastic deformation	None of above.
44. If metal is heated at below recrystallisation temperature before being processed under cold working, we get	
High degree of plastic deformation	Lower degree of plastic deformation
No plastic deformation	None of above.
45. Grain growth means	
Increase in grain size	Decrease in grain size
No change in grain size	None of above
46. Which of the following needs the study of Manufacturing Engineering?	
To understand design, operations and maintenance	To decide the best alternative machine tool
To conduct research and development program for developing best and more efficient machine tools	All the above
47. Dies for stamping, forming, cutting, piercing and embossing also involves Manufacturing engineering.	
T	F
48. What are the quality required for a shop floor supervisor?	
Democratic leadership	Result consciousness
Correct judgement	All the above
49. A supervisor must have the following skills	
Education	Maturity
Group spirit	All the above
50. Manufacturing engineering does not play any role in increasing per capita income of any nation	
T	F

Chapter 3: Metal Casting Processes	
1. Which of the following process involved in casting?	
Heating the metal	Cooling the metal
Melting the metal	Slicing the metal
2. In casting process the molten metal is poured into	
A Mould of desired shape	In a tanker
In a Cylinder	None of the above
3. After the molten metal is poured into the mould, the mould is then	
Placed in a refrigerator	Placed in an acid pool
Placed in an oil pool	Allowed to cool and solidify
4. The plant where the castings are made is called a _____	

Carpentry Shop	Foundry Shop
Machining Shop	Welding Shop
5. Moulding of some plastic material is also possible.	
T	F
6. The liquid metal that runs through the channels without friction in the mould obeys which of the following theorem?	
a) Bernoulli's theorem	b) Clausius theorem
c) Helmholtz's theorem	d) Carnot's theorem
7. Which of the following flows is responsible for too less pouring time of molten metal in the mould?	
a) Laminar flow	b) Viscous flow
c) Turbulent flow	d) None of the above
8. 'V' or 'f' marked surfaces on a casting indicates?	
a) Camber allowance	b) Machining allowance
c) Draft allowance	d) Shrinkage allowance
9. Considering the shrinkage allowance, the amount of pattern, when compared to casting is?	
a) larger than casting	b) smaller than casting
c) same as casting	d) None of above
10. The process of removing unwanted material from the casting is called?	
a) fettling	b) cleaning
c) finishing	d) blowing
11. Which of the following is used for making the hollow cavities in the casting?	
a) chaplet	b) vent rod
c) core	d) chill
12. What is the limitation of oil as a binder?	
a) at lower temperature, bond between sand mix and oil becomes strong	b) at higher temperature, bond between sand mix and oil becomes strong
c) should be added in high volumes	d) quickly hardens
13. Cereals are added to the molding sand to improve which of the following?	
a) hot strength	b) porosity
c) green strength	d) edge hardness
14. To improve the surface finish of castings, which of the following additive is used in the molding sand?	
a) resins	b) seal coal
c) oils	d) wood flour
15. To permit the escape of gases generated in the mold, which of the following are provided?	
a) vent holes	b) chills
c) chaplets	d) core print
16. Which of the following is 'not' an allowance given to the pattern for casting?	
a) Shrinkage	b) Draft
c) Hole	d) Machining
17. Which of the following group of material type is used in mold making?	

a) Metallic only	b) Non-Metallic only
c) Both metallic as well as non-metallic	d) Neither metallic nor non-metallic
18. Which of the following non-metallic material is not used in the synthesis of molds?	
a) Magnesite	b) Silimanite
c) Zircon	d) Valcanised rubber
19. Which of the following material is not used for mold making?	
a) Iron	b) Zinc
c) Mild steel	d) Alloy steel
20. Phosphorus is added to steel mold for which of the following reason?	
a) It increases strength and hardness of steel	b) It increases refractoriness of steel
c) It increases porosity of steel	d) It increases finishing of steel
21. Which of the following factor is not considered while selecting a kind of pattern?	
a) Quantity of casting	b) Types of moulding method
c) Shape of the casting	d) Nature of moulding process
22. In a three-piece pattern moulding arrangement, what keeps the alignment between the two parts of the pattern?	
a) Cope	b) Drag
c) Dowel pins	d) Cheek
23. Which of the following pattern operation is cheapest?	
a) Sweep pattern	b) Gated pattern
c) Match plate pattern	d) Skeleton pattern
24. The skeleton pattern is filled with sand.	
True	False
25. Which of the following tool is not used for clamping purpose?	
a) C-clamp	b) Trammels
c) Bar clamp	d) Hand Vice
26. Which of the following is not a function of a core?	
a) It is used to form internal cavities	b) It is used to form a part of green sand mould

c) It is used as a part of gating system	d) It is used as a part of furnace
27. Which of the following statement is true?	
a) Cores are permanent	b) Cores are semi-permanent
c) Cores are permanent & semi-permanent	d) Cores are not permanent
28. Which of the following is not counted as mold characteristics?	
a) Possession of strength	b) Possession of refractoriness
c) Resist corrosion	d) Resist metal penetration in molds
29. Which of the following sand mold contains free water?	
a) Green sand mold	b) Dry sand mold
c) Core sand mold	d) Shell mold
30. The degree or intensity of ramming _____	
a) Increases bulk density	b) Decreases bulk density
c) Does not change bulk density	d) Can increase as well as decrease bulk density
31. Natural moulding sand have which of the following qualities _____	
a) Freely available in abundance	b) Contains clay in a large amount
c) Moisture content range is wider	d) All of the mentioned
32. What is the disadvantage of hand molding?	
a) Damage to the projections	b) Costly method
c) Non-uniform strength	d) Good surface finish of the mold
33. Which is not a machine molding process?	
a) Jolting	b) Squeezing
c) Sand slinging	d) Hand molding
34. Which machine molding process will give uniform strength throughout the mold?	
a) Sand slinging	b) Squeezing
c) Jolt and squeezing	d) Jolting
35. In which of the following molding process strength at the top of the mold is higher?	
a) Hand molding	b) Squeezing
c) Jolting	d) Jolt and Squeezing

36. In which of the following molding process strength at top of the mold is less?	
a) Hand molding	b) Squeezing
c) Jolting	d) Jolt and Squeezing
37. Which of the following molding methods is the costliest?	
a) Sand slinging	b) Jolt and squeezing
c) Jolting	d) Hand molding
38. Which of the following molding methods have the least production rate?	
a) Sand slinging	b) Jolt and squeezing
c) Jolting	d) Hand molding
39. Which of the following molding methods have the highest production rate?	
a) Sand slinging	b) Jolt and squeezing
c) Jolting	d) Hand molding
40. Which of the following methods of ramming is suitable for the small batch production of castings?	
a) Hand moulding	b) Squeezing
c) Jolting	d) Sand slinging
41. Which of the following processes is the first step involved in the sand casting?	
a) Clamping	b) Cooling
c) Mould making	d) Pouring
42. It is possible to provide any kind of internal features to the casting by the help of pattern only.	
True	False
43. During the pouring process, filling time of molten metal should be short to avoid early solidification of the casting.	
True	False
44. With what does iron react to give out Ferrous Oxide?	
a) Carbon dioxide	b) Nitrogen
c) Ozone	d) Oxygen
45. What is the chemical formula of silica?	
a) SiO	b) SiO_2
c) SiO_3	d) SiO_4

46. For the functioning of the gating system, which of the following factors need not be controlled?	
a) Type of sprue	b) Size of runner
c) Temperature of molten metal	d) Type of riser
47. Which of the following does not allow the turbulently flowing liquid metal to directly enter the gate?	
a) Gate basin	b) Sprue
c) Runner	d) Riser
48. Which of the following helps connecting runner and the mold cavity?	
a) Sprue	b) Riser
c) Gate	d) Pouring cup
49. Which of the following gate is also called as ‘drop gate’?	
a) Top gate	b) Bottom gate
c) Parting gate	d) Middle gate
50. With an increase in the volume of casting, the freezing time will?	
a) Increase	b) Decrease
c) Will not change	d) No relation

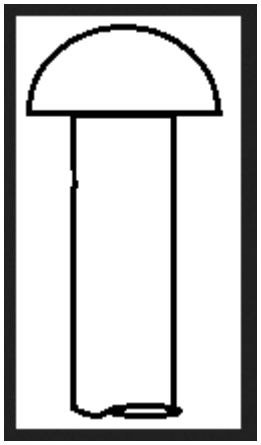
Chapter 5: Metal joining processes welding	
1. Which of the following is not included in weldability?	
a) Ability of mechanical soundness	b) Serviceability of joint
c) Strain relieving brittleness	d) Metallurgical compatibility of metal
2. Weldability does not depend on which of the following factor?	
a) Boiling point	b) Melting point
c) Thermal expansion	d) Thermal conductivity
3. What does HAZ stand for?	
a) Helium Aerated Zone	b) Heated Area Zone
c) Heat Affected Zone	d) Heat Allowed Zone
4. With an increase in the heat input of arc welding method, how does it affect the voltage applied?	

a) Increases	b) Decreases
c) Remains same	d) No relation
5. In fusion welding, welded pieces are kept together under pressure.	
True	False
6. Materials having high thermal conductivity are difficult to melt.	
True	False
7. Which of the following is not a type of arc welding?	
a) Plasma	b) Electro-slag
c) Submerged	d) Air-acetylene
8. Which of the following is not a type of resistance welding?	
a) Seam	b) Projection
c) Electro-slag	d) Spot
9. Which of the following materials are not suited for cold welding?	
a) Brass	b) Steel
c) Silver	d) Gold
10. Laser is classified under newer beam.	
True	False
11. Which of the following is not a type of solid-state welding?	
a) Projection	b) Ultrasonic
c) Friction	d) Diffusion
12. A liquid phase has to be used in cold welding.	
True	False
13. Thermite contains which metal?	
a) Zinc	b) Copper
c) Aluminum	d) Manganese
14. Which of the following property is responsible for weld metal cracking?	
a) Stress	b) Strain
c) Temperature conditions	d) Pressure conditions
15. Which of the following types of fuel gas is commonly used in gas welding?	
a) Biogas	b) Coal gas
c) Acetylene	d) Methane
16. In gas welding, the joint can be made even much stronger than the original.	

True	False
17. Gas welding is mainly suited for welding of thin sheets, small diameter pipes and tubes.	
True	False
18. Acetylene is a non-toxic gas which can be kept or stored in a cylinder at any pressure.	
True	False
19. In gas welding, the plastic pipes are mainly used for making the connection between gas torch and regulators.	
True	False
20. A welding torch is mainly used for mixing and burning the gases in the desired proportions.	
True	False
21. Oxy-acetylene process is most suited for which of the following process of joining?	
a) Metal wires	b) Metal sheets
c) Metal tubes	d) Metal bars
22. Carburizing flame has excess of oxygen supply.	
True	False
23. Oxidizing flame has equal volumes of oxygen and acetylene supply.	
True	False
24. What is the flame temperature of acetylene?	
a) 1700°C	b) 2200°C
c) 2800°C	d) 3200°C
25. What is the order of temperature of heat produced in an electric arc furnace?	
a) 3000°C – 4000°C	b) 4000°C – 5000°C
c)5000°C – 6000°C	d) 6000°C – 7000°C
26. The distance from the center of arc to the tip of electrode is called what?	
a) Arc distance	b) Arc length
c) Arc crater	d) Arc depth
27. Which material is not used as an iron coating on the electrode used in arc welding?	
a) Cellulose	b) Iron powder
c) Calcium fluoride	d) Steel

28. What is the capacity of an automatic welding machine?	
a) 100 to 200A	b) 300 to 400A
c) 500 to 700A	d) 800 to 3000A
29. What is the capacity of a light manual welding machine?	
a) 100 to 200A	b) 300 to 400A
c) 500 to 700A	d) 800 to 3000A
30. What is the efficiency of an A.C. welding transformer?	
a) 0.6	b) 0.7
c) 0.8	d) 0.9
31. Which material is not used for making non-consumable electrodes?	
a) Carbon	b) Graphite
c) Sodium	d) Tungsten
32. Why is carbon used in carbon arc welding?	
a) Generation of more heat at electrode tip	b) Generation of less heat at electrode tip
c) Provides coating	d) Fixed polarity is maintained
33. Which gas is used as a protection in carbon arc welding?	
a) Carbon dioxide	b) Carbon monoxide
c) Carbon tetra fluoride	d) Methane
34. What is the temperature of the negative electrode in metal arc welding?	
a) 2200°C	b) 2300°C
c) 2400°C	d) 2500°C
35. What is the temperature of the positive electrode in metal arc welding?	
a) 2300°C	b) 2400°C
c) 2500°C	d) 2600°C
36. Which kind of resistance is experienced in upset butt welding?	
a) Electric resistance	b) Magnetic resistance
c) Thermal resistance	d) Air resistance
37. Which of the following can be easily be welded from flash butt welding process?	
a) Tin	b) Lead

c) Cast irons	d) Carbon steel
38. Electrodes used in spot welding are made up of which material?	
a) Only Copper	b) Copper and tungsten
c) Copper and chromium	d) Copper and aluminum
39. How are the metals to be welded connected to each other in spot welding?	
a) Electric contact	b) Magnetic field
c) Mechanical pressure	d) Direct contact
40. Which of the following method is not used in applying pressure in spot welding process?	
a) Hand lever	b) Foot lever
c) Air pressure	d) Hydraulic cylinder
41. In flash butt welding, the forced-out metal is called flash.	
True	False
42. Brazing is defined as the joining of two metal pieces by using a filler metal.	
True	False
43. Copper and aluminum can be joined by brazing when _____ alloy is used.	
a) Copper-zinc	b) Aluminum-silicon
c) Copper-tellurium	d) Aluminum-zinc
44. _____ solders are used for glass-to-glass and glass-to-metal soldering.	
a) Lead-silver	b) Tin-zinc
c) Cadmium-zinc	d) Indium-tin
45. Aluminum can be joined to another aluminum with the use of _____ solder.	
a) Lead-silver	b) Indium-tin
c) Cadmium-silver	d) Fusible alloy
46. Addition of _____ increases the mechanical properties of a tin-lead solder.	
a) Bismuth	b) Tellurium
c) Antimony	d) Molybdenum
47. Which gas is used for the removal of oxygen layer formed on molten iron?	
a) Hydrogen	b) Oxygen
c) Carbon dioxide	d) Chlorine

48. What are the number of opening available in the cutting torch used in oxygen cutting process?	
4	5
6	7
49. Cast irons are best treated using oxygen cutting process.	
T	F
50.  Which type of rivet head does the given figure represent?	
a) Cup head	b) Countersunk head
c) Pan head	d) Conical head