Subject: -Manufacturing Processes (22446)

SYLLABUS

Chapter No.	Name of chapter	Marks With Option
1	Fundamental of Machining & Machining Operations	28
2	Shaping / Slotting Machines	20
3	Casting Processes and Plastic Molding	22
4	Forming Processes	18
5	Joining Processes	12
6		
7		
8		
9		
10		
	Total Marks: -	**100**

BOARD THEORY PAPER PATTERN FOR MPR (22446)

Q.1		**Attempt any FIVE** **5*2=10**
	a)	Fundamental of Machining & Machining Operations.
	b)	Shaping / Slotting Machines.
	c)	Casting Processes and Plastic Moulding.
	d)	Casting Processes and Plastic Moulding.
	e)	Joining Processes
	f)	Joining Processes
	g)	Joining Processes
Q.2		**Attempt any THREE** **3*4=12**
	a)	Fundamental of Machining & Machining Operations.
	b)	Shaping / Slotting Machines.
	c)	Casting Processes and Plastic Moulding.
	d)	Forming Processes

Q.3		**Attempt any THREE** **3*4=12**
	a)	Fundamental of Machining & Machining Operations.
	b)	Fundamental of Machining & Machining Operations.
	c)	Shaping / Slotting Machines.
	d)	Casting Processes and Plastic Moulding.
Q.4		**Attempt any THREE** **3*4=12**
	a)	Fundamental of Machining & Machining Operations.
	b)	Shaping / Slotting Machines.
	c)	Casting Processes and Plastic Moulding.
	d)	Forming Processes
Q.5		**Attempt any TWO** **2*6=12**
	a)	Fundamental of Machining & Machining Operations.
	b)	Casting Processes and Plastic Moulding.
	c)	Forming Processes
Q.6		**Attempt any TWO** **2*6=12**
	a)	Shaping / Slotting Machines.
	b)	Forming Processes
	c)	Joining Processes

CLASS TEST - I

PAPER PATTERN

COURSE: -Manufacturing Processes (22446)

PROGRAMME: -Mechanical Engineering

Syllabus: -

Unit No.	Name of the Unit	Course Outcome (CO)
1	**Fundamental of Machining & Machining Operations.**	**CO-446.01**
2	**Shaping / Slotting Machines.**	**CO-446.02**
3	**Casting Processes**	**CO-446.03**

Q.1	**Attempt any FOUR4*2=8Marks**	Course Outcome (CO)
a)	Fundamental of machining & Machining operations	CO-446.01
b)	Fundamental of machining & Machining operations	CO-446.01
c)	Fundamental of machining & Machining operations	CO-446.01
d)	Shaping / Slotting Machines	CO-446.02
e)	Shaping / Slotting Machines	CO-446.02
f)	Casting Processes	CO-446.03
Q.2	**Attempt any THREE 3*4=12 Marks**	
a)	Fundamental of machining & Machining operations	CO-446.01
b)	Fundamental of machining & Machining operations	CO-446.01
c)	Shaping / Slotting Machines	CO-446.02
d)	Casting Processes	CO-446.03

CLASS TEST - II

PAPER PATTERN

COURSE: - Manufacturing Processes (22446)

PROGRAMME: -Mechanical Engineering

Syllabus: -

Unit No.	Name of the Unit	Course Outcome (CO)
3	**Moulding Process**	**CO-446.03**
4	**Forming Processes**	**CO-446.04**
5	**Joining Processes**	**CO-446.05**

Q.1	**Attempt any FOUR** **4*2=8Marks**	Course Outcome (CO)
a)	Casting Processes & Plastic Molding	CO-446.03
b)	Forming Processes	CO-446.04
c)	Casting Processes & Plastic Molding	CO-446.03
d)	Joining Processes	CO-446.05
e)	Forming Processes	CO-446.04
f)	Joining Processes	CO-446.05
Q.2	**Attempt any THREE** **3*4=12Marks**	
a)	Joining Processes	CO-446.06
b)	Forming Processes	CO-446.05
c)	Joining Processes	CO-446.04
d)	Casting Processes & Plastic Molding	CO-446.03

COURSE OUTCOME (CO)

COURSE: - Manufacturing Processes (22446)

PROGRAMME: -Mechanical Engineering

CO.NO.	Course Outcome
CO-446.01	Produce jobs using Lathe & drilling machines.
CO-446.02	Produce jobs using shaping & slotting operations.
CO-446.03	Prepare products using different casting Process & mouling process.
CO-446.04	Prepare products using different forming processes
CO-446.05	Use joining process to produce job.

1. Fundamental of Machining and Machining Operations

Position in Question Paper **Total Marks-28**

Q.1. a) 2-Marks.
Q.1. b) 2-Marks.
Q.2. a) 4-Marks.
Q.3. a) 4-Marks.
Q.3. d) 4-Marks.
Q.4. a) 6-Marks.

Descriptive Question

1. Explain the mechanics of chip formation with neat sketch.
2. What are the different types of chips in machining?
3. Define Taper. What are the different types of taper turning & describe any one in brief.
4. How lathe machines are classified.
5. What are the cutting parameters of turning operation? Explain any one.
6. Define tool signature & explain with suitable example.
7. Give the classification of drilling machine.
8. Explain with neat sketch counter boring & counter sinking operation of drilling machine.
9. What is knurling operation & why it is performed?
10. Draw the neat sketch of lathe machine.

MCQ Question

(Total number of Question=Marks*3=22*3=66)

Note: Correct answer is marked with **bold.**

1. In metal cutting operation, the metal is removed in the form of _____.
   a) Chips c) workpiece
   b) Raw Material d) None of these
2. The types of chips produced in machining operation are continuous chips, Discontinuous chips and _____.
   a) Continuous chips c) **Continuous chips with B.U.E.**
   b) Burr d) Scrap
3. The metal in front of cutting tool gets compressed severely causing ____
   a) Shear stress c) Cutting stress
   b) Tensile stress d) All of above
4. The lathe machine tool is called as _____.
   a) Multi point **c) Single Point Tool**
   b) Gear d)All of above
5. It is main body of tool which is gripped in tool holder is _____.
   a) Face c) Nose
   b) Flank **d) Shank**
6. Counter boring is operation of enlarging the end of a hole cylindrically which forms a _____ shoulder.
   a) square c) circle
   b) Base d) All of above
7. The shape of tool is specified in a special sequence which is called as _____.
   a) Tool c) Threading
   b) Tool Signature d) None of above.
8. ____ is the operation producing a cylindrical hole by removing metal by rotating edge.
   a) Trimming **c) Drilling**
   b) Boring d) Threading
9. _____ is permanently mounted on the top left end of the bed to support the spindle.
   a) Tail stock c) Carriage
   b) Head Stock d) Bed

10. _____ is the operation of machining the ends of workpiece to produce flat surfaces perpendicular to the lathe axis
    a) Turning
    b) Drilling
    c) Threading
    d) Facing.
11. _____ is the cutting of internal threads using a tool known as Tap.
    a) Threading
    b) Tapping
    c) Reaming
    d) Turning
12. _____ of a drill is the distance the drill moves in to the work at each revolution of the spindle.
    a) Feed
    b) Depth of cut
    c) Speed
    d) None of above
13. _____ is the accurate way of sizing and finishing a hole which is previously drilled.
    a) Boring
    b) Drilling
    c) Turning
    d) All of above
14. Parting off is the operation of a _____ after it has been machined to the desired shape & size
    a) Swapping
    b) Cutting
    c) Stretching
    d) None of above.
15. Before drilling, the centre hole is located on the workpiece then _____ __ is used to Produce an indentation at the centre.
    a) Drill
    b) Ram
    c) Centre Punch
    d) Tap
16. _____ drilling machine is simplest type of drilling machine mainly used for light duty work.
    a) Portable
    b) Column Type
    c) Sensitive
    d) None of above.
17. _____ operation of enlarging existing hole.
    a) Drilling
    b) Threading
    c) Boring
    d) None of above.
18. The _____ in drilling operation refers to the peripheral speed of a point on the surface of the drill in contact with the work
    a) Feed
    b) Cut
    c) Feed
    d) Centre Punch
19. The main function of lathe machine is to produce _____ jobs by turning.
    a) Cylindrical
    c) Square

b) Triangle
d) None of above.

20. It is the wedge shape portion where the face & both the flank of tool meets is called as _____.
a) Flank
c) Point or Nose
b) Face
d) None of above.

21. In Orthogonal cutting the face of the tool is _____ to the direction of the tool travel.
a) parallel
c) other than 90°
b) perpendicular
d) None of above.

22. _____ it is the top surface of tool or that between the shank and point of the tool.
a) Face
c) Square
b) Point
d) None of above.

23. The angle between the face and flank of the tool is known as ___ _____.
a) Relief Angle
c) Rake Angle.
b) Lip Angle
d) None of above.

24. _____ is the main supporting structure o the lathe machine .
a) Carriage
c) Tailstock
b) Head stock
d) Bed.

25. _____ is also known as dead centre which is mounted on right hand side of the bed.
a) Saddle
c) Chuck
b) Tailstock
d) None of above.

26. _____ is H shaped casting supported over a bed ways and slider on the bed.
a) carriage
c) cross slide
b) Saddle
d) None of above.

27. _____ can be swiveled to desired angle for moving the tool in desired angular direction.
a) Compound Rest
c) Tool Post
b) Cross slide
d) all of above.

28. Tool Post is mounted on compound rest to hold the _____.
a) Workpiece
c) Tool
b) Job
d) None of above.

29. A ____ is the one of the most important devices for holding and rotating the piece of the work on lathe.
a) Centres
c) Rest

b) Face plates **d) Chuck.**

30. _____ can be defined as a uniform increase or decrease in diameter of cylindrical surface.
a) Cone c) Form
b) Taper d) None of above.

31. Knurling is the operation of producing a _____ shaped pattern on the surface of the workpiece.
a) diamond c) Triangle
b) point d) all of above.

32. _____ is one of the most important operations performed on lathe to produce internal as well as external threads.
a) Boring **c) Threading**
b) Reaming d) Non of above.

33. _____ is the thickness of the material removed in one revolution.
a) Feed c) Cutting Speed
b) Speed **d) Depth of cut**

34. The dill _____ is pressed at the centre point to produce required hole.
a) Nose c) angle
b) point d) all of above.

35. _____ drilling machine is most modern machine used for drilling medium and heavy jobs.
a) Radial c) Portable
b) Sensitive d) None of above.

36. _____ drilling is defined as drilling a hole at least three times larger than its diameter.
a) Peck c) Gang
b) Hole **d) Deep Hole drilling**.

37. _____ drilling machine consists of four to six separate drilling heads arranged side by side.
a) Sensitive **c) Gang**
b) Radial d) all of above.

38._____ is the accurate way of sizing and finishing a hole, which is previously drilled.
a) drilling c) Centre punch
b) Reaming d) None of above.

39. Counter sinking is the operation of making _____ shaped enlargement of the end of hole.
a) square
b) cone
c) Triangle
d) rectangle

40. _____ is the operation of smoothing and squaring the surface around a hole for a seat, for a nut.
a) Spot facing
b) Drilling
c) Tapping
d) Reaming.

41. _____ in drilling is equal to one half of feed.
a) Speed
b) feed
c) Depth of cut
d) None of above.

42. In drilling softer material requires _____ speeds .
a) no
b) Zero
c) less
d) Higher.

43. _____ drills can be operated at higher speeds than high crbon steel tools.
a) All
b) Carbide
c) Some
d) HSS.

44. _____ Spindle drilling machine has several spindles driven by same motor.
a) Gang
b) Sensitive
c) Radial
d) Multiple.

45. If the size of hole is more than _____ mm, drll tool is provided with oil holes.
a) 20
b) 40
c) 60
d) None of above.

46. _____ drilling machine is a small, compact, light weight, self –contained drilling machine.
a) Sensitive
b) Portable
c) Gang
d) None of above.

47. The smaller drills must rotate _____ than a large drill to maintain same cutting speed.
a) same
b) less
c) Higher
d) all of above.

48. _____ can be calculated if the speed of job and length of job is known.
a) Speed
b) Feed
c) Depth of cut
d) Machining Time.

2. Shaping / Slotting Machines

Position in Question Paper **Total Marks-12**

Q.1. c) 2-Marks.
Q.2. b) 4-Marks.
Q.4. b) 6-Marks.

Descriptive Question

1. Draw the neat sketch of Shaper.
2. State different parts of shaper.
3. Explain with neat sketch crank & slotted link quick return mechanism.
4. State functions of slotter.
5. State different types of slotter.

MCQ Question

(Total number of Question=Marks*3=12*3=36)

Note: Correct answer is marked with **bold**

1. In Shaper machines the Ram _____ to remove the metal chips from the workpice in forward direction.
   a) reciprocates
   b) vibrates
   c) moves
   d) cuts
2. In shaper machines the metal cutting id done only in _____ direction.
   a) Return
   b) Forward
   c) Both
   d) None of above.
3. In shaper machines it is essential to reduce the tile taken by the Return stroke (Idle) which is achieved by _____.
   a) Crank
   b) Quick Return Mechanism
   c) Link
   d) Gear
4. _____ is clamped to the front end of the RAM
   a) Table
   b) Workpiece
   c) Tool
   d) Tool Head
5. The base of shaper is heavy & rigid ____ part to support to fixed and moving parts of the machine.
   a) **Cast Iron**
   b) Aluminum
   c) Steel
   d) None of above.
6. In Slotter machine, the cutting action is only during the _____ stroke.
   a) Up
   b) Forward
   c) cutting
   d) Downward
7. In Slotter ,Column is vertical member which is integral _____ with base.
   a) Rolling
   b) Forging
   c) Casting
   d) Welding
8. _____ is reciprocating member of slotter machine moundted on guide ways of column.
   a) Base
   b) Ram
   c) Saddle
   d) Any of above
9. Slotter machine is used for cutting _____ , keys

a) Block
c) groves
b) Ram
d) All of above

10.The maximum stroke length in slotter machine is _____ mm.
a) 300
c) 500
b) 400
d) 100

11. _____ is a heavy box like structure mounted on vertical guide ways of the column.
a) Cross rail
c) Bed
b) Saddle
d) Chuck

12. In shaper, material from workpiece is cut or removed only during forward cutting stroke while return stroke is _____.
a) Constant
c)Idle
b) Fixed
d)Varying

13.Cross feed screw is rotated by hand to move the _____ in the cross-wise direction
a) Crank
c) Drum
b) Saddle
d) Table

14. In shaper, the _____ consists of clapper box, clapper block & a tool post
a) Drum
c) Chuck
b) Apron
d) Each of the mentioned

15.In shaper , the workpiece is held securely in a ___ mounted on the table.
a) Gear
c) chuck
b)Box
d) None of above.

16.In shaper cutting time to return time practically varies ____
a) 3 : 2
c) 1 : 2
b) 2 : 3
d) 2 : 1

17._____ quick return ,mechanism is used for shaper & slotter.
a) Newton
c) White
b) Whitworth
d) None of above.

18.In shaper operations, ____ is given to workpiece by movement of table on which workpiece is mounted.
a) speed
c) Depth of cut
b) feed
d) all of above

19. The slotting machine is a _____ machine like shaper.
a) movable
c) To & fro
b) reciprocating
d) All Above

20.The slotter can be considered as a _____ shaper.

a) Horizontal
c) inclined
b) Parallel
d) **Vertical**

21.In slotter, feed mechanism, if the table is rotated on a vertical axis, the feed is termed as _____ feed.

a) circular
c) Half circle
b) zero
d))constant

22. _____ slotter is a heavy duty slotter consisting of heavy cast base and heavy frame.

a) Production
c)Sensitive
b) zero
d) punch

23. _____ machine takes light cuts and gives accurate finishing.

a) Light
c) Half circle
b)Production
d) constant

24. Hydraulic drive of ram consists of _____ pump , valve chamber, a cylinder and piston.

a) Pneumatic
c) Hydraulic
b) Air
d) All

25. _____ can be used for machining convex or concave surface or combination of both.

a) Shaper
c) Milling
b) Lathe
d) Drilling

26. In slotter, maximum diameter of workpiece that can be machined _____.

a) 900 mmm
c) 250 mm
b) 400 mm
d) 400 mm

27. Shaper can be used for producing a flat or plane surface which may be in a horizontal , a vertical or an _____.

a) circular
c) U shape.
b) plain
d) angular

28. In shaper the _____ is fed perpendicular to the line of tool motion each time.

a) tool
c) Crank
b) work
d) None of above

29. Gear or spline can be easily cut on shaper by using _____ centre.

a) Fixed
c) moving
b) Index
d) constant

30. In shaper for cutting keyways or slots a _____ nose tool can be used.

a) circular
c) Half circle

b) Rectangle d) constant

31. Apart from slotting operation, slotter can perform variety of operations such as _____ external and internal plain surfaces.
a) Rough c) Hard
b) Finishing d) All of above

32. In shaper _____ key ways are cut by using special tool holder.
a) Internal c) Both
b) External d) None of above

33. In shaper the workpiece is tightly secured between the jaws of vice or a clamp provided with ____ slot of Table.
a) V c) U
b) F **d) T**

34. If table is feed parallel to the face of the column, the feed movement is termed as _____ feed.
a) Rough **c) Cross**
b) smooth d) All of above

35. Slotter has a rigid _____ to take up all load and cutting forces.
a) Face c) column
b) Base d) All of above

36. In slotter , table is called _____ table as it can be rotated by rotating a worm which meshes with a worm gear.
a) Rotary c) Rough
b) Fixed d) All of above

3. Casting Processes and Plastic Moulding

Position in Question Paper **Total Marks-18**

Q.1. c) 2-Marks.
Q.2. b) 4-Marks.
Q.4. b) 6-Marks.

Descriptive Question

1. State advantages of casting processes.
2. What is pattern & what are the different types of patterns.
3. What are the different types of molding sand & describe collapsibility in brief.
4. Draw the sketch of gating system of casting process & show all the parts on it.
5. What are the different types of moulding sand & describe collapsibility in brief.
6. Draw a neat sketch of cupola furnace & label all pats on its.
7. Enlist different types of allowances provided on pattern. Explain Shrinkage allowance.
8. Distinguish between thermosetting plastic & thermoplastics.
9. Explain compression molding with neat sketch.

MCQ Question

(Total number of Question=Marks*3=18*3=54)

Note: Correct answer is marked with **bold.**

1. _____ may be defined as a "a metal object obtained by allowing molten metal to solidify in a mould.
   a) Casting c) Rolling
   b) Welding d) Forging
2. In casting _____ production of components is possible.
   a) Return c) Both
   b) Forward d) None of above.
3. _____ is replica of the object of desired casting.
   a) Mould **c) Pattern**
   b) Shape d) All of above
4. _____ is the common material used for casting which is used for casting.
   a) Wood c) Wax
   b) Metal d) Plastic
5. Moulding consists of all operations necessary to prepare a _____ cavity for receiving a molten metal.
   a) Core **c) Mould**
   b) Pattern d) None of above.
6. _____ piece pattern with three pieces, also known as Multi Piece pattern.
   a) Many c) Three
   b)Single d) One
7. _____ pattern is used in production work where many castings are required.
   a) Single c) Two piece
   b) Gated e) Sweep
8. Casting is most _____ manufacturing process.
   a) Simple c) easy
   b) Complex **d) Versatile**
9. _____ casting is most commonly used process which gives around 80 % of total production.

a) Shell
c) sand
b) Facing
d) All of above

10. The casting industries are also called as _____
a) Factory
c) workshop
b) Foundry
d) None of above.

11. ____ are forms, usually made of sand, which are placed into a mould cavity to form the interior surfaces of casting.
a) Pattern
c) core
b) gate
d) None of above

12. The pattern is a physical model of the casting used to make the _____.
a) mould
c) melt
b) chaplets
d) None of above

13. _____ refers to all operations necessary to remove sand, scale and excess metal.
a) Forming
c) Fitting
b) Cleaning
d) Melting

14. Solid or _____ piece pattern are the simplest type of patterns .
a) Flat
c) Gated
b) Sweep
d) Single

15. In _____ pattern , while withdrawing, the pattern is first taken out leaving the loose pieces.
a) loose piece
c) Match plate
b) Split type
d) None of above

16. Moulds of large size but symmetrical in shape particularly of circular cross section can be easily prepared by using a _____ pattern instead of full pattern.
a) Single piece
c) Skeleton
b) Sweep
d) None of above

17. _____ is the property by which sand particles stick together.
a) Porosity
c) Flowability
b) Plasticity
d) Cohesiveness

18. _____ is the property of the sand, it should be capable of withstanding high temperature, without melting.
a) Thermal stability
c) Collapsibility
b) Refractoriness
d) All of above

19. Collapsibility is for easy removal of casting, the sand mould should break or ____ easily after the solidification of molten metal.
a) Porous
c) Flows

b) Collapse d) Sticks

20. The Natural sand is also known as _____ sand.

a) normal c) Loam

b) Black **d) Green**

21.Facing sand forms the face of the mould which is next to surface of _____.

a) Product **c) Pattern**

b) Cast d) Melting

22. Green sand which is dried or baked in oven after the mould is made is called _____.

a) Wet Sand **c) dry sand**

b) Sweep d) Single

23. Loam sand is high in clay upto _____.
loose pieces.

a) 50% c) 18 %

b) 0 % d) None of above

24. _____ are added reservoirs designed to feed liquid metal to the solidifying casting .

a) Sprue c) Gate

b) Risers d) Runner

25. Gate are the openings through which the molten metal _____ the mould cavity.

a) Returns **c) enters**

b) stops d) None of above

26. _____ furnace in which pig iron along with scrap is melted & iron castings are prepared.

a) Coupla c) Pit

b) Electric arc d) All of above

27.Gate are the openings through which the molten metal _____ the mould cavity.

a) Returns **c) enters**

b) stops d) None of above

28. _____ furnace in which pig iron along with scrap is melted & iron castings are prepared.

a) Coupla c) Pit

b) Electric arc d) All of above

29. Gate are the openings through which the molten metal _____ the mould cavity.

a) Returns **c) enters**

b) stops d) None of above

30. _____ is non metallic engineering material that can be shaped & formed.

a) Metal c) Alloy

b) Plastic d) All of above

31. The long chain plastic molecule made from monomers by the process of _____ is called polymer.
a) Meros c) enters
b) Poly **d) Polymerization**

32. _____ plastics do not soften on reheating and hence cannot be reworked.
a) Poly **c) Thermoset**
b) Thermo d) All of above

33. Thermoplast plastic soften under heat, harden on cooling and can be_____ under Heat.
a) resoftened c) Cools
b) hard d) None of above

34. The high heat and _____ insulation make their use in electrical equipment.
a) Chemical c) Thermal
b) Electrical d) All of above

35. Rubbers & some thermoplastic sheets are formed by the _____ process.
a) Moulding **c) Calendaring**
b) V. Forming d) None of above

36. Vacuum forming is also known as _____ .
a) Thermoforming c) Empty cavity.
b) Moulding d) All of above

37. In Compression moulding _____ mechanism is used to impart pressure of 20 to 30 MPa.
a) Pneumatic c) Vacuum
b) Hydraulic d) None of above

38. _____ moulding is most practical process of moulding for thermoplastic materials.
a) Injection c) Calendaring
b) Extrusion d) None of above

39. The meaning of _____is continuous flow of material through extrusion die.
a) Forming **c) extrusion**
b) Flowing d) None of above

40. Toys , kitchen utensils , bottle caps , Tool handle are products of _____ moulding.
a) Vacuum c) Extrusion
b) Injection d) All of above

41. Bottles , Tubes, containers, hollow jars are the products of ____ moulding.
a) Flowing c) Plastic
b) Vacuum **d) Blow**

42. _____ container is the products of vacuum forming.

a) Yoghurt c) Bottle caps

b) Hollow jars d) All of above

43. Curtains, tapes, credit cards are the products of _____ process..

a) Moulding **c) calendaring**

b) Vacuum forming d) None of above

44. The _____ process consists of feeling the powdered plastic from the hopper into a heated chamber.

a) moulding c) Vacuum

b) **Extrusion** d) All of above

45. In calendaring process the _____ of the sheet produced depends on the spacing between the rollers.

a) Cost **c) Thickness**

b) quality d) None of above

46. Thermoplastic plastics are Long chain _____ polymer with negligible cross links. prepared.

a) Linear c) same

b) Three dimensional d) cross

47. Thermosets plastic have three dimensional network structure with number of ____ linked polymers .

a) Same c) Adjacent

b) Linear d) Cross

48. Thermoset plastics are formed by _____ polymerization..

a) Subtraction **c) Condensation**

b) addition d) All of above

49. Thermoplast plastics are formed by _____ polymerization.

a) Cross **c) addition**

b) stops d) None of above

50. _____ plastics undergo a number of chemical changes on heating , hence are not reversible.

a) Coupla c) Rubber

b) Thermoset d) All of above

51. _____ material show good resistance to corrosion.

a) Metal **c) Plastic**

b) alloy d) None of above

52. Phenol formaldehyde , urea Formaldehyde are the examples of _____Plastics

a) Thermosets
c) Thermoplast
b) Rubbber
d) All of above

53. Acrylics , polymide, PVC are the examples of _____ plastics

a) thermoplast
c) poly
b) Plastic
d) all of above

54. Plastic material are having very _____ density

a) high
c) Moderate
b) low
d) good

4. Forming Processes

Position in Question Paper **Total Marks-18**

Q.1. c) 2-Marks.
Q.2. b) 4-Marks.
Q.4. b) 6-Marks.

Descriptive Question

1. Define forging, & stage its types.
2. Differentiate between open & closed die forging.
3. Explain the classification of rolling mills with neat sketch.
4. Enlist any eight applications of rolling.
5. Explain direct extrusion with neat sketch.
6. Enlist any four merit & applications of Indirect extrusion.

MCQ Question

(Total number of Question=Marks*3=16*3=48)

Note: Correct answer is marked with **bold.**

1. The mechanical method of shaping the metals using external force to deform metal plastically is termed as _____.
   a) Welding
   b) Forming Process
   c) Casting
   d) Machining
2. The types of chips produced in machining operation are continuous chips,
   a) Continuous chip
   b) Burr
   c) Continuous chips with BUE
   d) Scrap
3. The mechanical working of metals below recrystallization temperature is called as __.
   a) Cold working
   b) Hot working
   c) Working
   d) None of above
4. The mechanical working of metals _____ recrystallization temperature is called as Hot working.
   a) Blow
   b) at
   c) above
   d) All of above
5. During hot working operation, metal remains in _____ state hence, larger deformation is possible with less force.
   a) Elastic
   b) Plastic
   c) Tensile
   d) normal
6. _____ is mechanical working of metals in which desired shape and size is obtained by applying compressive force through hammer.
   a) Forging
   b) Base
   c) Rolling
   d) All of above
7. The process of formation of new refined grains or structure is called _____.
   a) Crystal
   b) Recrystallization
   c) Polymer
   d) None of above.
8. _____ rolled parts do not require any finishing operation.
   a) Hot
   b) Cold
   c) Deep
   d) The
9. _____ Die forging close tolerance between top and bottom dies must be maintained.

a) Open
b) Close
c) Blacksmith
d) Pack

10. _____ forging is blacksmith working in a village.
a) Whitesmith
b) Drop
c) Smith
d) Upset

11. _____ forging is developed to form heads on bolt only.
a) Drop
b) Smith
c) Blacksmith
d) Upset

12. Rapid blow is produced by using mechanical _____ in drop forging.
a) Drop
b) Smith
c) Blacksmith
d) Upset

13. Usually forging cost is _____ than casting .
a) more
b) Less
c) same
d) None of above

14. In _____ impression die contains finishing operation and one or more auxiliary Impressions for preliminary forging operations.
a) Mould
b) Multi
c) Blow
d) single

15. In _____ die forging two flat dies are used, so accuracy depends upon the skill of the operator & skill between the two dies.
a) Close
b) Open
c) smith
d) Upset

16. In _____ die contains only one cavity or impression which is the finishing peration.
a) Blow
b) Smith
c) Single
d) Closed

17. The blow hole present in casting are pressed together & hence eliminated by high working pressure used in _____ working process.
a) Wet
b) Hot
c) Single
d) Cold

18. In ____ forging slow squeezing action is produced by using a press.
a) Drop
b) Press
c) upset
d) None of above

19. _____ is the operation of reducing the thickness of the worpiece.
a) Blow
c) Drop

b) Fullering d) Pressing

20. _____ is the operation consists of passing the hot ingot through two rolls rotating in opposite direction .

a) Rolling c) Forging

b) Extrusion d) All of above.

21. Cold Rolling is a rolling of metals below _____ temperature.

a) High c) hot

b) Recrystallization d) None of above

22. In _____ rolling no internal stresses are set up in metal.

a) Hot c) Two high

b) Cold d) Three high

23. In cold rolling no ____is required.

a) Cooling c) maintenance

b) cost **d) heating**

24. _____ is a rectangular or square in rolling products.

a) Billets c) Slab

b) Smith d) None of above

25. Rolling mill used for producing slab is called _____ mill.

a) Finishing **c) Slabbing**

b) Blooming d) Continuous

26. _____ high rolling mills consists of three horizontal rolls, positioned directly one over the other

a) Four c) Two

b) Three d) None

27. In _____ rolling mill, it consists of a number of non- reversing two high mills arranged one after the other.

a) Four high c) Two high

b) Three high **d) Continuous**

28. It consists of two working rolls of smaller diameter and four or more back up rolls of large diameter in _____ mills

a) Slab Rolling c) Four high

b) Cluster d) Two high

29. In _____ metal is subjected to plastic deformation and it undergoes reduction & elongation .

a) Extrusion c) Two

b) Three
d) None

30. In extrusion, the section of product will depend on the shape of the ___ opening.
a) punch
c) Both
b) Die
d) None

31. The principal of extrusion can be understood with the help of simple example, " ____ tooth paste from a tube.
a) Pulling
c) taking
b) Brushing
d) Squeezing

32. ____ is more widely used in the manufacture of solid and hollow sections from non- ferrous metals.
a) Rolling
c) Forging
b) Extrusion
d) None

33. In _____ extrusion, metal is extruded in the same direction of applied force.
a) Forward
c) Backward
b) Normal
d) None

34. In _____ extrusion, part is forced through the hollow ram in backward direction.
a) Forward
c) Backward
b) Tube
d) None

35. ____ is common method of forward extrusion method using a mandrel to form the bore of the tube.
a) Tube
c) Both
b) Direct
d) None

36. Process waste in _____ is higher than in rolling
a) Rolling
c) Casting
b) Extrusion
d) None

37. In Extrusion, the shape with ____ cross-section can be produced.
a) Same
c) Constant
b) Opposite
d) None

38. Extrusion is lighter, sounder and stronger than _____.
a) rolling
c) Both
b) Forging
d) casting

39. Direct extrusion is also called as _____ extrusion.
a) Backward
c) Both
b) Forward
d) None

40. In indirect extrusion, billet does not move inside the chamber, there is not _____

between them.

a) support
b) Friction
c) gap
d) None

41. Cross sectional shapes cannot possible by rolling can be _____.

a) Extruded
b) rolled
c) Casted
d) None

42. Two high rolling mills consists of two heavy horizontal rolls, placed one _____ the other.

a) under
b) over
c) below
d) None

43. Cluster rolling mill is generally used for _____ rolling.

a) Hot
b) cold
c) Casting
d) None

44. Hot rolling refines metal grains, resulting in _____ mechanical properties.

a) same
b) less
c) improved
d) None

45. In three high rolling mills, direction of rotation of the upper & lower rolls are the same , but _____ roll rotates in a direction opposite to both of this.

a) back
b) Intermediate
c) both
d) None

46. In four high rolling mill, the larger diameter rolls are called _____ rolls.

a) Backup
b) back
c) big
d) None

47. The cross section of extruded product represent the area of opening _____.

a) Punch
b) Both
c) Die
d) None

48. Rolling mill is used to manufacture various parts in _____ industry.

a) Rolling
b) Extrusion
c) Casting
d) None

5. Joining Processes

Position in Question Paper **Total Marks-28**

Q.1. a) 2-Marks.
Q.1. b) 2-Marks.
Q.2. a) 4-Marks.

Descriptive Question

1. Differentiate between MIG & TIG welding processes.
2. Give practical applications of spot welding.
3. Enlist any four types of welding defects. State its causes & remedies.
4. Differentiate between gas welding & resistance welding.
5. Enlist any four applications of soldering & brazing.
6. State the advantages & limitations of brazing.

MCQ Question

(Total number of Question=Marks*3=8*3=24)

Note: Correct answer is marked with **bold.**

1. _____ is a process of joining two similar pieces of metal by means of heat and applying pressure.
   a) Welding
   b) Forming Process
   c) Casting
   d) Machining
2. The welding join can be mad stronger than parent metal if _____ metal is used.
   a) Welded
   b) Ferrous
   c) High Pressure welding
   d) Filler
3. In general case, the welding equipments are not _____
   a) ready
   b) availbale
   c) Costly
   d) None of above
4. Ultra- violet light are very harmful for health produced during the process _____ and also fumes & spatters.
   a) Casting
   b) Welding
   c) Forging
   d) All of above
5. ___ preparation should be prominent for good weld.
   a) Side
   b) Plastic
   c) Edge
   d) Corner
6. _____ is mechanical working of metals in which desired shape and size is obtained by applying compressive force through hammer.
   a) Forging
   b) Base
   c) Rolling
   d) All of above
7. Fabrication with welding results in _____construction and there is saving in materials.
   a) good
   b) Solid
   c) Heavy
   d) lighter
8. During heating , the _____ changes occur in the weld filler metal.
   a) Physical
   b) no
   c) Metallurgical
   d) None of above

9. For metal thicker than _____, additional metal called filler metal is added to weld in for of welding rod.
   a) 1.5 mm c) 2.0 mm
   b) 2.5 mm d) 5.00 mm
10. The cylinder containing oxygen is painted black from outside and that containing _____ is painted in maroon colour.
   a) Carbon c) Ammonia
   b) Acetylene d) None of above.
11. For efficient welding, proper adjustment of _____ is necessary.
   a) Gas **c) Flame**
   b) Supply d) None of above.
12. _____ metal arc welding is a process which, melts and joins metals by heating them with an arc .
   a) Carbon c) Ammonia
   b) Tungsten **d) Shielded**
13. In ___ **,** heat arc welding is produced by an arc stuck between non-consumable tungsten electrode & the work
   a**) TIG** c) Shielded arc welding
   b) MIG d) None of above.
14. There is no need of any kind of ____ for welding in Tungsten Arc Welding.
   a) Carbon c) flux
   b) Both d) None of above.
15. In MIG welding of metals using a _____ metal electrode in an inert gas Atmosphere.
   a) Non consumable c) Non
   b) **Consumable** d) None of above.
16. _____ welding has large use in automobile industry, aircraft parts welding.
   a) Shielded arc welding **c) MIG**
   b) Arc d) TIG
17. TIG welding is used for joining _____ metals.
   a) Dissimilar c) Similar
   b) Opposite d) None of above.
18. Seam Welding is a continuous weld on two _____ pieces of sheet metal
   a) Same **c) overlapping**

b) matched
d) None of above.

19. ____ welding is used for body building of vehicle.
a) Spot
c) TIG
b) Seam
d) None of above.

20. _____ is a group of small voids, blow holes, or gas pockets.
a) Warpage
c) Cracks
b) Porosity
d) None of above.

21. _____ may be on microscopic scale or macroscopic scale depending on their size.
a) Carbon
c) Blow Holes
b) Cracks
d) None of above.

22. In Brazing, filler metal is distributed between the closely fitted surfaces of the joint by _____ action.
a) Free flow
c) Capillary
b) gravity
d) None of above.

23. In _____ , two parts are joined by the use of molten filler metal whose melting point is below the solidus line.
a) Soldering
c) Brazing
b) Welding
d) None of above.

24. Soldered joints are _____ than Brazed joints.
a) Stronger
c) medium
b) light
d) Weaker