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1	The desirable material for HERF	Brittle	Ductile	Viscoelastic	Viscoplastic
2	In HERF process	Small amount of energy is applied for a very short interval of time	Large amount of energy is applied for a very short interval of time	Large amount of energy is applied for a very large interval of time	Small amount of energy is applied for a very large interval of time
3	Spring back effect in HERF is	High	Negligible	Moderate	None of the above
4	An explosive forming is one of the techniques to form a metal plate using	Shock pressure from EM pulse	high shock pressure from the explosion	Magnetic field	High temperature
5	explosive forming is not economically viable when a ___ is required.	Very small number of components	very large number of components	Precision	Complex part manufacturing
6	Magnetic pulse forming is a high-speed forming process in which ___ force is used to deform the workpieces.	hydraulic	electromagnetic	mechanical	pneumatic
7	Electrohydraulic forming (EHF) is based on the ultra-high-speed deformation of metal using	heating of metal	shockwaves in water	electromagnetic shock in vacuum	hydraulic power
8	Advantages of Electro Hydraulic Forming (EHF)	Extremely fast	All	Only a single one-sided die is required	Fine details and sharp lines can be easily formed
9	Which is a metal forming process in which a piece of sheet metal is stretched and bent simultaneously over a die in order to form large contoured parts.	HERF	Stretch forming	Electrohydraulic forming	Explosive forming
10	disadvantage of metal spinning is	does not involve removal of material	Repairing the object is not cost-effective	Several operations can be performed in one set-up	less cost than other metal forming techniques
11	___ is a sheet metal forming technique where a sheet is formed into the final workpiece by a series of small incremental deformations.	Stretch forming	Incremental sheet metal forming	Flow forming	Metal spinning
12	___ is a high-precision type of blanking, which is the die cutting of the outside shape of a part.	Micro coining	Fine blanking	Micro extrusion	Petro-forge forming
13	"Using the discharge of current from a capacitor bank, an electric arc is generated in water between two electrodes. This electric arc vaporizes the surrounding water, converting electrical energy into an intense shockwave of mechanical energy."- This process is involved in:	Petro-forge forming	Electrohydraulic forming	Magnetic pulse forming	Explosive forming
14	A method of forming rotationally symmetrical sheet metal parts?	Stretch forming	Metal spinning	Micro forming	Magnetic pulse forming
15	___ produces axisymmetric cylindrical workpieces starting from hollowed tubes, premachined blanks, or forged or deep-drawn parts.	Electro hydraulic forming	Flow forming	Stretch forming	Magnetic pulse forming
16	Which of the the following metal can not be formed by High Energy Rate Forming.	Copper	Cast Iron	Steel	Aluminium
17	Thin components of nickel based and Cobalt based super alloys can be mass-produced using	Forward flow forming	Backward flow forming	Spinning	HERF
18	Only female die is needed in	Electromagnetic forming	High energy rate forming	Roll forming	Electro hydro forming

19	Automatically controlled movements of rollers are employed in	Spinning	Flow forming	Roll forming	Shear spinning
20	Vacuum in the die is prerequisite for	High energy rate forming	Explosive forming	Electromagnetic forming	Electro Hydro forming
21	Hemispherical hemi ellipsoidal profile forming is achieved in	Roll forming	Shear Spinning	High Energy Rate Forming	Explosive forming
22	Capacitor Bank is required in	Electromagnetic forming	Electro Hydro forming	Magnetic pulse forming	Explosive forming
23	Generation of Eddy current is essential in	High energy rate forming	Electromagnetic forming	Explosive forming	Hydroforming
24	Production of conical and axisymmetric parts is speciality of	Explosive forming	Shear spinning	High energy rate forming	Roll forming
25	In metals subjected to cold working, strain hardening effect is due to	Slip Mechanism	Dislocation Interaction Mechanism	Twinning Mechanism	Fracture Mechanism
26	What is the movement of block of atoms along certain crystallographic plane and directions termed as?	Glide	Slip	Twinning	Jog
27	Which one of the following is the correct ascending order of packing density for the given crystal structures of metals?	SC–FCC–BCC	SC–BCC–FCC	BCC–SC–FCC	BCC–FCC–SC
28	Which one of the following crystal systems is valid for Gold?	Orthogonal	Cubic	Hexagonal	Triclinic
29	Surface imperfections which separates two orientations that are mirror image of one another is called	Stacking Fault	Twinned Boundary	Grain Boundary	Tilt Boundary
30	Line imperfection in a crystal is called	Miller defect	Edged is location	Frenkel defect	Schottky defect
31	Edge dislocation is a	Point imperfection	Line imperfection	Surface imperfection	Volume imperfection
32	Edge dislocation of a metal is	Point defect	Line defect	Surface defect	Volume defect
33	Total area under stress strain curve is known as	Modulus of ductility	Modulus of toughness	Toughness	Resilience
34	Area under load elongation curve is	Toughness	Ductility	Resilience	Modulus of toughness
35	Which of the following shows potential of plastic deformation	Elastic modulus	Ductility	Resilience	Modulus of Resilience
36	Substitute of yield strength in brittle materials is	UTS	Proof Strength	Breaking Strength	Compressive strength
37	Effect of strain-hardening is reduced by	Hardening	Annealing	Martempering	Austempering
38	Breaking stress in ductile materials is lower than Ultimate tensile strength because of	Cupping	Necking	Filleting	Dislocation movement
39	The lowering of the yield stress when deformation in one direction is followed by the deformation in opposite direction is known as _____	Creep Effect	Bauschinger effect	Wohler effect	Elastic effect
40	When a metal stretches, but does not break under a certain load, this point is called the _____ Point.	Tensile	Yield	Stretch	Ultimate strength
41	Ductility is the ability of a metal to _____ before it breaks.	Bend	Stretch or elongate	Be forged	Be indented
42	Engineering stress-strain curve and True stress-strain curve are same up to	Proportional limit	Yield point	Elastic limit	Tensile strength point
43	True stress-strain curve need to be corrected after	Elastic limit	Yield limit	Tensile strength	No need to correct
44	In a tensile test of a ductile material, necking starts at	Lower yield stress	Ultimate tensile strength	Upper yield stress	Just before fracture
45	Ericksen test indicates	Castability	Formability	Weldability	Machineability
46	Which region is subjected to a thermal cycle but is not deformed during welding?	flow arm zone	heat-affected zone (HAZ)	stir zone	None of the above
47	Post weld heat treatment is	to make the material hot enough for welding	heating the material after welding	to improve weld penetration	done to reduce corrosion

High elastic modulus in materials arises from	High strength of bonds	Weak bonds	combination of bonds	Vanderwaals bond
Von Mises and Tresca criteria give different yield stress for	Pure shear stress	bending stress	Balanced bi-axial stress	Uni-axial stress
Time dependent recoverable deformation under load is called _____ deformation	Anelastic	Elastic after-effect	Elastic	Visco-elastic
In metals subjected to cold working, strain hardening effect is due to	Dislocation Interaction Mechanism	Slip Mechanism	Twinning Mechanism	Fracture Mechanism
Which one of the following crystal systems is valid for Gold?	Cubic	Orthogonal	Hexagonal	Triclinic
Surface imperfections which separates two orientations that are mirror image of one another is called	Twinned Boundary	Stacking Fault	Grain Boundary	Tilt Boundary
Time dependent permanent deformation at elevated temperature is called _____.	Creep	Plastic Deformation	Elastic Deformation	Aelastic Deformation
The movement of block of atoms along dense crystallographic plane and directions termed as	Slip	Glide	Twinning	Jog
Which one of the following is the correct ascending order of packing density for the given crystal structures of metals?	SC–BCC–FCC	SC–FCC–BCC	BCC–SC–FCC	BCC–FCC–SC
Line imperfection in a crystal is called	Edged is location	Miller defect	Frenkel defect	Schottky defect
Edge dislocation is a	Line imperfection	Point imperfection	Surface imperfection	Volume imperfection
Edge dislocation of a metal is	Line defect	Point defect	Surface defect	Volume defect
Forge welding is best suited for.....	Wrought iron	Cast iron	Stainless steel	High carbon steel
Which of the following is not included in weldability?	Strain relieving brittleness	Ability of mechanical soundness	Serviceability of joint	Metallurgical compatibility of metal rods
sheet metal drawing is used to make	cup shaped parts	thin tubes	wire	
Surface cracking due to low working temperature in hydrostatic extrusion is called	Bamboo defect	fluid defect	orange peel	fishtail
Which of the following types of fuel gas is commonly used in gas welding?	Acetylene	Biogas	Coal gas	Methane
Insufficient blank holding force in deep drawing leads to	Wrinkling	orange peel	stretcher strains	earing
An isotropy of sheet in deep drawing lead to	Earing	wrinkling	orange peel	stretcher strains
A stress state in coining is	compressive	shear	tensile	tensile compressive
Limiting draw ratio in deep drawing depends on	Thickness of sheet	capacity of press	yield strength of material	percentage elongation of sheet metal
Toothpaste tube is produced by	Hollow backward extrusion	solid backward extrusion	solid forward extrusion	hollow forward extrusion
Mass production of seamless tubes is done by	extrusion	spinning	piercing	welding
Good idea of deep drawability can be got by	Ericksen test	Brinell test	Jominy test	Compression test
Plastic deformation is.....of dislocations	movement	jog	pile up	annihilation
Plastic deformation starts at	Yield point	UTL	Breaking point	Fracture load
Proof stress is substitute for	Yield strength	Ultimate Tensile strength	fracture stress	fatigue limit
Strain hardening is seen in	Cold working	hot working	warm working	Casting
Capacity of material to exhibit considerable elastic recovery upon release is	Resilience	Hardness	Toughness	Endurance
Strain hardening takes place if	Obstacles are present	Obstacles are moving	Obstacles are weak	Obstacles are absent
Figure-out the odd point in the following	Fracture point	Proportional limit	Elastic Limit	Yield point
Engineering stress-strain curve and True stress-strain curve are equal up to	Yield point	Tensile strength point	Proportional limit	Elastic limit
Bauschinger effect	Dependence of yield stress on path and direction	Hysteresis loss during loading and unloading	None	Anelastic deformation
Total area under stress strain curve is known as	Modulus of toughness	Modulus of ductility	Toughness	Resilience
Area under load elongation curve is	Ductility	Toughness	Resilience	Modulus of toughness
Which of the following shows potential of plastic deformation	Ductility	Elastic modulus	Resilience	Modulus of Resilience
Substitute of yield strength in brittle materials is	Proof Strength	UTS	Breaking Strength	Compressive strength
Effect of strain-hardening is reduced by	Annealing	Hardening	Martempering	Austempering
Breaking stress in ductile materials is lower than Ultimate tensile strength because of	Necking	Cupping	Filleting	Dislocation movement
Coarse grains defect in deep drawing is	Orange peel	wrinkling	stretcher strains	earing
Deep drawing defect due to elongation at yield point is	stretcher strains	wrinkling	earing	orange peel
A stress state in deep drawing is	tensile compressive	shear	tensile	compressive
A stress state in blanking is	shear	tensile compressive	compressive	tensile
In which of the following process, heat is created by blacksmith fire	Forge welding	Spot welding	Projection welding	Seam welding
Gun shells are produced by	Indirect extrusion	direct extrusion	continuous extrusion	hydrostatic extrusion
Aircraft wings and window frames are made by	stretch forming	drawing	rolling	forging
Strengthening of material is.....movement of dislocations	Obstructing	acceleration	initiating	tunnelling
Orange peel defect is seen in	Deep Drawing	wire Drawing	metal spinning	HERF
Luders Bands speak about	Ductility	Fatigue strength	UTS	Endurance
Electrohydraulic forming (EHF) is based on the ultra-high-speed deformation of metal using	shockwaves in water	heating of metal	electromagnetic shock in vacuum	hydraulic power
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The desirable material for HERF	Ductile	Brittle	Viscoelastic	Viscoplastic
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An explosive forming is one of the techniques to form a metal plate using	high shock pressure from the explosion	Shock pressure from EM pulse	Magnetic field	High temperature
Magnetic pulse forming is a high-speed forming process in which ___ force is used to deform the workpieces.	electromagnetic	hydraulic	mechanical	pneumatic
___ is a sheet metal forming technique where a sheet is formed into the final workpiece by a series of small incremental deformations.	Incremental sheet metal forming	Stretch forming	Flow forming	Metal spinning
A method of forming rotationally symmetrical sheet metal parts?	Metal spinning	Stretch forming	Micro forming	Magnetic pulse forming
Which of the the following metal can not be formed by High Energy Rate Forming.	Cast Iron	Copper	Steel	Aluminium
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explosive forming is not economically viable when a ___ is required.	very large number of components	Very small number of components	Precision	Complex part manufacturing
Advantages of Electro Hydraulic Forming (EHF)	All	Extremely fast	Only a single one-sided die is required	Fine details and sharp lines can be easily formed
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When a metal stretches, but does not break under a certain load, this point is called the _____ Point.	Yield	Tensile	Stretch	Ultimate strength
In a tensile test of a ductile material, necking starts at	Ultimate tensile strength	Lower yield stress	Upper yield stress	Just before fracture
Ericksen test indicates	Formability	Castability	Weldability	Machinability
Which region is subjected to a thermal cycle but is not deformed during welding?	heat-affected zone (HAZ)	flow arm zone	stir zone	None of the above
Weld decay is seen in	Stain less steel	Cast Iron	Bronze	Aluminium
Which of the following is most weldable	Low carbon steel	high Carbon steel	Alloy steel	Medium Carbon steel
Advances in welding technology are focused on	reduced HAZ	Increased heat flow	increased HAZ	hard and strong HAZ
Weldability	Decreases with increased hardenability	Increases with increased hardenability	is unaffected by hardenability	Increases with Carbon and other alloying elements
Weld Thermal Cycle is independent of	Post Weld treatment	Preheating	Weld joint design	Heat input rate
In multiple run welding, in ordinary steels, the grain refinement takes place	Second Run	first run	third run	fourth run
Weld contour affects	Fatigue properties	Creep properties	response to high pressure	Response to low pressure
Which of the following needs preheating before welding	Cast Iron	Stain less steel	Copper	Aluminium
Post weld heat treatment is	heating the material after welding	to make the material hot enough for welding	to improve weld penetration	done to reduce corrosion
Identify the welding defect occurring at lower temperature	cold cracking	undercut	Cracked weld metal	cold shut
Find the odd term out pertaining to fusion welding	ThermoMechanically affected zone	Weld pool	Heat affected zone	weld thermal cycle
Subzone next to welded joint in HAZ is	Grain growth	Grain refinement	Tempered zone	Base metal
Find the odd term pertaining to welding	Friction stir welding	flame welding	Arc welding	Thermit welding
The welding process with no filler metal is	Autogenous	homogeneous	heterogeneous	fusion
Thermite contains	Aluminium	Copper	Zinc	Manganese
With an increase in the heat input of arc welding method, how does it affect the welding speed?	Decreases	Increases	Remains same	No relation
In resistance welding the electrode material is made of	Copper	Carbon steel	Stainless steel	High speed steel
Which of the following ray is not produced during welding?	Gamma rays	Visible light rays	Infrared ray	Ultra violet rays
The metals having good weldability, in descending order are	cast steel, iron, carbon steel, cast iron	cast iron, iron, carbon steel, cast steel	carbon steel, iron, cast steel, cast iron	iron, carbon steel, cast steel, cast iron
The current is not passed continuously in	Seam welding	Projection welding	Flash welding	Percussion welding
Flash butt welding is-	Resistance welding	Gas welding	Arc welding with straight polarity	Arc welding with reverse polarity

Weld metal cracking occurs due to	Stress	Strain	Temperature conditions	Pressure conditions
Which property controls the porosity of the metal	Gas solubility	Solid solubility	Flame solubility	Liquid solubility
Distortion in welding occurs due to.....	Improper clamping methods	Use of wrong electrodes	Oxidation of weld pool	Improper composition of parent material
On which of the following factor, does weldability not depend?	Boiling point	Melting point	Thermal expansion	Thermal conductivity
Electrodes used in spot welding are	Copper and aluminium	Only Copper	Copper and tungsten	Copper and chromium
Which of the following joint has high corrosion resistance?	Welded joint	Riveted joint	Bolted joint	brazed joint
Which of the following types is not fillet weld?	butt joint	lap joint	T-joint	Corner joint
Which of the following is an example of plastic welding?	Forge welding	Gas welding	Thermit welding	Arc welding
Electric resistance welded pipes are manufactured by	Seam welding	Percussion welding	Flash welding	Projection welding
The voltage needed in resistance welding does not depend upon	Length of weld	Composition	Area	Thickness of weld
Which of the following is not a resistance welding?	Pressure welding	Spot welding	Butt welding	Percussion welding
Which effect is not seen in alloys on weldability?	Provision for oxidation to molten metal	Reduction in segregation	Control of ductile-malleable transformation temperature	Grain refinement
Precipitation of chromium carbides at elevated temperature along grain boundaries of stainless steel is called	sensitization	oolitization	earing defect	fishtail defect