

METROLOGY

Q No. 1. Metrology is a branch of science which deals with ___.

- A) Medical applications
- B) Aeronautical Applications
- C) Measurements
- D) None

Q No. 2. SI system established in _____ by the General Conference on Weights and Measures

- A) 1960
- B) 1958
- C) 1968
- D) None

Q No. 3. _____ is the agreement of the result of a measurement with the true value of the measured quantity

- A) Precision
- B) Accuracy
- C) Interchangeability
- D) none of this

Q No. 4. Unit which is not derived is _____

- A) Kilogram
- B) Newton
- C) Pascal
- D) Watt

Q No. 5. Base units of physical quantities given by system international are

- A) Five
- B) Seven
- C) Nine
- D) Eight

Q No. 6. The smallest measurement that can be made with that instrument is called

- A) Least count
- B) Precision

C)small count

D)Low count

Q No. 7. When the micrometer is closed, if the zero on the thimble scale is below the index line, the error is _____ and the error is the be ____ from the reading.

A)Negative error, Added

B)Positive error, Subtract

C)Negative, Subtract

D)None of the above

Q No. 8. Hermaphrodite caliper is also called _____

A)Inside calipers

B)Transfer Calipers

C)Odd leg calipers

D)Jenny calipers

Q No. 9. What is the least count of steel rule?

A)0.05 mm

B)1.0 mm

C)0.02 mm

D)1.5 mm

Q No. 10. A hooked vernier depth gauge is used to check _____

A)inside diameter

B)distance to a recess

C)outside diameter

D)None of the above

Q No. 11. When the micrometer is closed, if the zero on the thimble scale is above the index line, the error is _____ and the error is the be ____ from the reading.

A)Negative error, Added

B)Positive error, Subtract

C)Negative, Subtract

D)None of the above

Q No. 12. Spring joint calipers have the advantage of___

- A)Quick setting
- B)Quick releasing
- C)Both a & b
- D) None of the above

Q No. 13. The simple measuring instruments used to transfer measurements from a steel rule to objects and vice versa

- A)Vernier caliper
- B)Height gauge
- C)Calipers
- D)Depth Gauge

Q No. 14. The dial used for easy measurement of the wall thickness of pipes is called as

- A) Dial depth gauge
- B)Dial Pipe gauge
- C)Bore Gauge
- D)None of the above

Q No. 15. Identify the tool used for measuring ovality

- A)Feeler gauge
- B)Bore gauge
- C)Snap gauge
- D)ring gauge

Q No. 16. A bore gauge can be used for finding the

- A)direct measurement of hole
- B)finish of bores
- C)axis difference of holes
- D)taper of bores

Q No. 17. Following tool is impossible to measure the reading directly

- A)Vernier caliper
- B)micrometer
- C)Hemispherical gauge
- D)dial indicator

Q No. 18. INVAR

- A)46% nickel
- B)38% nickel
- C)42% nickel
- D)36% nickel

Q No. 19. For checking shafts diameter, the gauge used is _____.

- A)Plug gauge
- B)Ring gauge
- C)Profile gauge
- D)Thread gauge

Q No. 20. A standard plug gauge has its diameter finished to

- A)Limit size
- B)Actual size
- C)Nominal size
- D)Basic size

Q No. 21. A taper ring gauge is used for checking

- A)external taper
- B) internal taper
- C)external threads
- D)internal threads

Q No. 22. ELINVAR has

- A)46% nickel
- B)38% nickel
- C)42% nickel
- D)36% nickel

Q No. 23. A component having a length of 1000 mm is accurately inspected by ?

- A)Long Vernier Scale
- B)Steel Tape
- C)Length Bar
- D)Slip Gauge

Q No. 24. Johansson gauge is also called

- A) Pitch Gauge
- B) Plug Gauge
- C) Snap Gauge
- D) Slip Gauge

Q No. 25. Non graduated precision instrument is?

- A) Caliper
- B) Slip Gauge
- C) Vernier Caliper
- D) Steel Rule

MATERIAL TECHNOLOGY

Q No. 1. Steel has a carbon content varying upto _____ %

- A) 3
- B) 4
- C) 1.5
- D) 2.5

Q No. 2. Silica is an example for _____ material

- A) Ceramic
- B) Organic polymer
- C) Metal and alloy
- D) None of these

Q No. 3. Ferrum is a Latin word of _____

- A) Iron
- B) copper
- C) Silver
- D) Aluminum

Q No. 4. Plastic is an example for _____

- A) Metals
- B) Alloys
- C) Organic polymer
- D) Ceramics

Q No. 5. The ratio of magnetic induction to magnetic field is called

- A) Permeability
- B) coercive force
- C) density
- D) None of these

Q No. 6. The amount of carbon % in cast iron is _____

- A) 2--4
- B) 1--1.5
- C) 0.3-0.6
- D) None of these

Q No. 7. Steel containing 0.3- 0.6 % of carbon is

- A) Low carbon
- B) High carbon
- C) Medium carbon
- D) High speed

Q No. 8. Iron melts at _____ Temperature

- A) 1539 C
- B) 3000C
- C) 1000C
- D) 1235C

Q No. 9. _____ is forced into the blast furnace through a number of nozzles.

- A) hot air
- B) cold air
- C) water
- D) None of these

Q No. 10. _____ carbon steels are called Tool steels

- A) low carbon
- B) high carbon
- C) medium carbon
- D) None of these

Q No. 11. Mild steels are _____ steels

- A) low carbon
- B) high carbon
- C) medium carbon
- D) None of these

Q No. 12. _____ alloying element contributes to red hardness

- A) Cobalt
- B) chromium
- C) vanadium
- D) Molybdenum

Q No. 13. Ejector pins in moulds are made up of _____ material

- A) H12
- B) MS
- C) D1
- D) None of these

Q No. 14. Pliers, spanners, hammers and screwdrivers are made up of _____ material

- A) medium carbon steel
- B) high carbon steel
- C) HSS
- D) stainless steel

Q No. 15. Core and cavity plates in moulds are made up of _____ steel

- A) P20
- B) D1
- C) D2
- D) Mild steel

Q No. 16. Aircraft castings are made up of _____ alloys

- A) Aluminium
- B) copper
- C) Brass
- D) Bronze

Q No. 17. Material used in automobile parts which is 75% lighter than steel is

A) Magnesium

B) Zinc

C) Tin

D) Brass

Q No. 18. Brass is an alloy of copper and _____

A) Zinc

B) Tin

C) lead

D) None of these

Q No. 19. Bronze is an alloy of copper and _____

A) Zinc

B) Tin

C) lead

D) None of these

Q No. 20. Chemical symbol of Tin is _____

A) Sn

B) Zn

C) Mn

D) Tn

Q No. 21. Test performed during manufacturing such as in foundry, welding assembly is

A) Destructive test

B) Non destructive test

C) Process test

D) None of these

Q No. 22. _____ is used as an indenter in Brinell hardness tester

A) Hardened steel ball

B) Conical diamond

C) Rubber

D) None of these

Q No. 23. In _____ Test specimen either breaks or remains no longer useful for future

- A)ultrasonic
- B)tensile test
- C)hardness
- D)liquid penetrant test

Q No. 24. Izod and charpy specimens are used in _____ testing machine

- A)Tensile
- B)Hardness
- C)impact
- D)Bend

Q No. 25. Which of the following test is non destructive_____

- A)Compresive
- B)tensile test
- C)hardness
- D)liquid penetrant test

PRESS TOOL TECHNOLOGY

Q No. 1. In blanking operation, the cut out material is the

- A)Slug
- B)Cup
- C)Scrap
- D)Blank

Q No. 2. The operation of removing irregular edge of a drawn cup is

- A)Planishing
- B)dinking
- C)Perforatting
- D)Trimming

Q No. 3. Half hard strips can bend ___ degree angle across the grain

- A)120
- B)30
- C)90
- D)180

Q No. 4. The bright polished finish on the middle of a sheared hole is a result of _____ stage of shearing

- A) Plastic Deformation
- B) elastic Deformation
- C) Penetration stage
- D) Fracture Stage

Q No. 5. For piercing operations the cutting clearance is provided on ____.

- A) Punch
- B) Stripper
- C) Die
- D) Bottom plate

Q No. 6. The punch along with___ act as cutting elements of the Press tool.

- A) Stripper
- B) Back Plate
- C) Top Plate
- D) Die

Q No. 7. The alignment of plates in press tool is done by

- A) Dowels
- B) Screws
- C) Punch
- D) Die

Q No. 8. Softer the material to be cut on press tool

- A) Greater the land given
- B) Greater the angular clearance given
- C) Lesser the land given
- D) Lesser the angular clearance given

Q No. 9. A multistage press tool is commonly known as

- A) combination tool
- B) compound tool
- C) inverted tool
- D) progressive tool

Q No. 10. For mass production, which of the following is preferred

- A)Gang die
- B)Single pass
- C)Narrow run
- D)Double pass

Q No. 11. With reference to grain direction of strip, Bending operation is preferred

- A)Along the grain
- B)Across the grain
- C)No relation
- D)to avoid

Q No. 12. Floating punches are in punches holders.

- A)Press fitted
- B)Precise Sliding
- C)Loose
- D)Thread fitted

Q No. 13. Perforators are punches of diameter less than or equal to

- A)5 mm
- B)3 mm
- C)2.5 mm
- D)1.5 mm

Q No. 14. In guide plate tool, stripping is done by

- A)die
- B)traveling stripper
- C)punch
- D)guide plate

Q No. 15. The type of stripper used in compound tool is

- A)box stripper
- B)hook pin stripper
- C)traveling stripper
- D)fixed stripper

Q No. 16. An example of automatic stopper is

- A)Finger stopper
- B)Pin stopper
- C)Headed pin stopper
- D)trigger stopper

Q No. 17. Pilots length should be more than _____ .

- A)stopper
- B)guide pillar
- C)cutting punch
- D)shut height

Q No. 18. Pilots are used to _____ the strip.

- A)Stop
- B)lift
- C)feed
- D)Register

Q No. 19. Where the number of stages are more or if the pitch is too less in progressive tools,_____ no of side cutters are commonly used.

- A)4
- B)3
- C)2
- D)1

Q No. 20. In the case of tools without pilot, the side cutter is made having width

- A)equal to pitch
- B)more than pitch
- C)less than pitch
- D)not required

Q No. 21. The process of returning the blank into the strip to carry forward for the next station for further operations, are known as _____ .

- A)Ejection
- B)Shedding
- C)Cut and carry
- D)None of these

Q No. 22. Knockout plate and transfer pins are used in _____ Type of knockouts.

- A) Indirect shedding
- B) direct knockout shedding
- C) Both
- D) None of these

Q No. 23. The dowels are made in _____ grade

- A) IT5
- B) IT7
- C) IT 6
- D) IT8

Q No. 24. Shank is made out of _____

- A) MS
- B) OHNS
- C) HCHCr
- D) EN24

Q No. 25. Shank diameter will be equal to _____

- A) Press Ram hole Diameter
- B) Bolster plate hole diameter
- C) Shedder pin diameter
- D) Pillar diameter

CNC TECHNOLOGY

Q No. 1. Abbreviation of MCU stands for _____

- A) Machine Circuit Unit
- B) Machine Control Unit
- C) Motion Control Unit
- D) Memory Control Unit

Q No. 2. CNC uses _____ language

- A) Automatic pallet changer
- B) one time password
- C) Automated programmed tool
- D) Auto production timers

Q No. 3. Abbreviation of NC stands for _____

- A)NO CONTROL
- B)NUMERICAL CONTROL
- C)NOT CONTROL
- D)NEED TO CONTROL

Q No. 4. In _____ control The machining operations are performed at specific points and there is no machining while the machine table slides from one point

- A)contour
- B)Straight cut
- C)Point to point
- D)macro

Q No. 5. Feed back is available _____ system

- A)Open loop
- B)Closed loop
- C)Both A & B
- D)automatic loop

Q No. 6. which of the following are work holding devices.

- A)clamps
- B)Vises
- C)Either A or B
- D)both a and b

Q No. 7. The sliding friction, due to direct metal to metal contact, between the slide and slide ways is replaced with rolling friction by the use of _____

- A)needle
- B)ball/roller bearings
- C)bush
- D)None

Q No. 8. Cobalt in HSS Provides _____

- A)Hot hardness & form stability
- B)Keeness of the cutting edge
- C)More wear resistance
- D)All the above

Q No. 9. The abbreviation HSS stands for _____

- A)High speed scale
- B)high speed steel
- C)high surface speed
- D)NONE OF THE ABOVE

Q No. 10. Commonly used cutting tool material for conventional machine is _____

- A)HSS
- B)Carbide
- C)Diamond
- D)NONE OF THE ABOVE

Q No. 11. P and Q terms are used as parameters of _____

- A)Canned Cycle
- B)Dwell Time
- C)Offset numbers
- D)none

Q No. 12. Spindle rotation clockwise code is _____

- A)M03
- B)M04
- C)M05
- D)M06

Q No. 13. In this block G 01 G 41 X 10.0 Y 15.0 D 01 F 250, D indicates ____

- A)Radius
- B)Diameter
- C)Angle
- D)All the above

Q No. 14. _____ is a skip function symbol

- A)*
- B)/
- C)#
- D)≈

Q No. 15. In this block G00 X 100.0 Y 20.0, G represents _____

- A)Block
- B)Word
- C)Address
- D)Data

Q No. 16. In this block G00 X 100.0 , 100 represents _____

- A)Block
- B)Word
- C)Address
- D)Data

Q No. 17. The term D denotes _____ offset number

- A)CRC
- B)Tool length offset number
- C)Wear parameter
- D)none

Q No. 18. D and H terms are used as parameters of _____

- A)Canned Cycle
- B)Dwell Time
- C)Offset numbers
- D)None

Q No. 19. The G code using for Feed rate in mm/rev command is _____

- A)G96
- B)G97
- C)G98
- D)G95

Q No. 20. _____cycles are programming aids that simplify the programming

- A)NC
- B)DNC
- C)CANNED
- D)VMC

Q No. 21. In the word M03, the letter M is known as_____

A)Address

B)Data

C)block

D)Word

Q No. 22. Miscellaneous function is used for sub program cancel is _____

A)M99

B)M98

C)M82

D)M83

Q No. 23. G73 P100 Q1000 U1 W0.5 F 0.35 in this block , select the meaning of U1

A)Finishing allowance in X axis

B)Finishing allowance in Z axis

C)Starting point

D)Stock allowance

Q No. 24. G75 X 50 Z-20 P5000 Q 4000 F 0.5 in this block , select the meaning of P5000

A)Incremental depth on X axis

B)Incremental depth on Z axis

C)Relief amount of the tool at the cutting buttom.

D)Feed

Q No. 25. G02 is used for _____

A)Circular interpolation CCW

B)Circular interpolation CW

C)Linear Interpolation

D)Rapid positioning

MOULD TECHNOLOGY

Q No. 1. The components that are having internal undercuts on both sides of the part _____ are used.

- A) straight action form pin
- B) angle action split core
- C) straight action split core
- D) angle action form pin

Q No. 2. When the internal undercut is at a local area and on one side of the part _____ is used.

- A) straight action form pin
- B) angle action split core
- C) straight action split core
- D) angle action form pin

Q No. 3. The sprue is pulled from the sprue bush by _____

- A) ejector pin
- B) dowel pin
- C) push back pin
- D) sprue puller pin

Q No. 4. TYPES OF HOT RUNNER MOULD

- A) externally heated
- B) RUNNER HEATED
- C) internally heated
- D) A & C

Q No. 5. ANY MOULD IN WHICH A CONVENTIONAL RUNNER SYSTEM IS NOT INCORPORATED IS

- A) TWO PLATE MOULD
- B) THREE PLATE MOULD
- C) RUNNERLESS MOULD
- D) SPLIT MOULD

Q No. 6. The possible fix of the flow mark defect on the moulding is to _____.

- A)use a high viscous material.
- B)reduce injection pressure.
- C)provide a cold slug well in the mould.
- D)reduce the mould temperature.

Q No. 7. Thermoset materia is usually in the range of _____ celsius, approximately 30 celsius higher than barrel temperature.

- A)100-200
- B)130-300
- C)250
- D)30

Q No. 8. Larger moulds are heated directly by _____ .

- A)electricity
- B)hot plates
- C)hot plastic
- D)moulding machine

Q No. 9. In transfer mould design air removal is possible through_____

- A)Vents
- B)gate
- C)runner
- D)subrunner

Q No. 10. In hot chamber process the oil is supplied to the_____ by a hydraulic pump.

- A)Toggle clamp
- B)Platen
- C)Frame
- D)accumulator

Q No. 11. The cold chamber process is used for die casting metals that melt at higher temperature such as

- A)aluminium
- B)zinc
- C)lead
- D)copper

Q No. 12. Process where flat sheet material is converted to a three dimensional shape is_____

- A)Thermo forming
- B)Vaccuum moulding
- C)Blow moulding
- D)Rotoforming

Q No. 13. In MIM after injection moulding the component we called as _____

- A)green parts
- B)final part
- C)brown part
- D)yellow part

Q No. 14. The MIM process reaches densities of between _____and _____ of the theoretical material density.

- A)1
- B)96% and !00%
- C)56%and 90%
- D)80% and !00%

Q No. 15. The multi colour moulding machine can create a_____ end result from very different polymers

- A)less effective
- B)multi cavity
- C)highly effective
- D)none of the above

Q No. 16. WAIM stands for _____

- A)water Assisted Injection Moulding
- B)wide Assisted Injection Moulding
- C)Weight Assisted Injection Moulding
- D)All the above

Q No. 17. In Assisted Injection Moulding mould parts will have _____ inlets& outlets

- A)sink marks
- B)pin marks
- C)holes
- D)weld lines

Q No. 18. Assisted Injection Moulding is preferred when the component is_____

- A)soild
- B)undercut
- C)hollow
- D)narrow

Q No. 19. De-binding operations generate toxic emissions such as _____

- A)hydrogen
- B)formaldehyde
- C)trichlorethane.
- D)nitrogen

Q No. 20. AIM technology uses a _____ under pressure to core out a hollow plastic part in the mould

- A)additives
- B)fillers
- C)gas & fluid
- D)colour pigments

Q No. 21. _____ materials were only compression moulded or transfer moulded

A)thermoplast

B)plastic

C)Thermoset

D)rubber

Q No. 22. The most popular type of machine used for injection moulding Thermoset is the_____ machine.

A)compression moulding

B)line screw

C)double plunger

D)hand mould

Q No. 23. Heat the preforms in the -----range so the moulding material is ready to flow as soon as it is loaded into the heated mould.

A)50–149°C

B)93–149°C

C)90–180°C

D)100–220°C

Q No. 24. All water lines should be_____ and blown free of all residual water to avoid build up of rust due to standing water.

A)washed

B)wet

C)drained

D)plastered

Q No. 25. A mould properly designed and made may not remain proper, unless kept and _____ in a proper manner.

A)damaged

B)maintained

C)polished

D)scraped

ESTIMATION & COSTING

Q No. 1. Strikes and lockouts are examples of _____ sources of error

- A) Avoidable
- B) Un avoidable
- C) Expenses
- D) Permissible

Q No. 2. Drop in efficiency of worker comes under _____ sources of error

- A) Operator's health
- B) Avoidable
- C) Un avoidable
- D) Permissible

Q No. 3. Power failure comes under _____ sources of error

- A) Electrician
- B) Avoidable
- C) Un avoidable
- D) Permissible

Q No. 4. The error which leads to decrease in the estimated cost hence company may get loss is _____

- A) Over estimation
- B) Under estimation
- C) Costing
- D) Process estimation

Q No. 5. Fatigue allowance is generally _____ % of total time

- A) 0.02
- B) 0.04
- C) 0.05
- D) 0.1

Q No. 6. Handling time + Machining time is _____

- A) Total time
- B) Setting time
- C) Operation time
- D) Tear down time

Q No. 7. The time required for setting and fixing the job is _____

- A) Setup time
- B) Tear down time
- C) Regrinding time
- D) Machining Time

Q No. 8. The process which helps in comparing the estimated cost to the actual cost is

- A) Estimation
- B) Accounting
- C) Costing
- D) Purchasing

Q No. 9. High-speed steel used to manufacture milling cutters comes under _____ type of material

- A) Direct material
- B) Indirect material
- C) Prime cost
- D) Waste Material

Q No. 10. Find out the prime cost if Raw Material cost is Rs. 200 , Direct Labour cost is 250 and there is no direct expenses

- A) 450
- B) 50
- C) 850
- D) 550

Q No. 11. Cost of lubricant, oil, cotton waste comes under_____ type of Overhead

A)Administrative

B)Factory

C)Sales and distribution

D)Prime

Q No. 12. The rate of the total overheads to the total productive machine hours is termed as _____

A)Energy cost

B)space cost

C)Machine hour rate

D)Depreciation

Q No. 13. Scrap value is used to find _____

A)Material cost

B)Over head

C)Profit

D)Depreciation

Q No. 14. Any asset loosing its value because of new invention is known as _____

A)Capital loss

B)Depreciation

C)Obsolescence

D)Physical decay

Q No. 15. Which method of estimation is Very quick method & scientific in nature ?

A)Rough method

B)Cost centre method

C)Nttf Method

D)Own Method

Q No. 16. If the shape of a blank has angular and curved lines, which contour of blank has to be chosen for calculating the tooling hours

- A) Straight
- B) Angular
- C) Curved
- D) Irregular

Q No. 17. Formula to calculate the weight of a material is _____.

- A) Volume x Density
- B) Volume / Density
- C) Density / Volume
- D) Volume x Weight

Q No. 18. If manufacturing cost is Rs 24,800 , Determine the polishing charge ? Assume polishing cost = 3% of manufacturing cost .

- A) 687
- B) 841
- C) 744
- D) 900

Q No. 19. If manufacturing cost is Rs 24,800 , Determine the trial charge ? Assume trial cost = 5% of manufacturing cost .

- A) 1200
- B) 1000
- C) 2400
- D) 1240

Q No. 20. The time consumed for inspecting the particular mould is considered as _____ charge

- A) Inspection charge
- B) Assembly charge
- C) design charge
- D) Overall charge

Q No. 21. The type of estimation used of estimating pressure die casting is

- A) Rough Method
- B) NTTF Method
- C) Cost Centre Method
- D) None of the above

Q No. 22. If the shot weight is 105g, no. of cavities are 4 and each component weighs 25g. Find the weight of the feed system

- A) 5 g
- B) 25g
- C) 40g
- D) 15g

Q No. 23. 6 lakhs of components are produced in 2 yrs. Find the amortisation cost for a period of 1 yr if the mould cost is Rs6,00,000

- A) 1 rupee
- B) Rs. 3
- C) Rs. 2
- D) Rs. 0.5

Q No. 24. 4 lakhs of components are produced in 2 yrs. Find the amortisation cost for a period of 1 yr if the mould cost is Rs2,00,000

- A) 1 rupee
- B) Rs. 3
- C) Rs. 2
- D) Rs. 4

Q No. 25. Cost of the tool spread over no. of components is called

- A) Cleaning cost
- B) Shearing cost
- C) Amortisation cost
- D) Surface finishing cost

