

## MANUFACTURING ENGG

**Q No. 1.** Polyethylene comes under which type of plastic \_\_\_\_\_.

- A)thermoplastics
- B)thermosets
- C)Elastomers
- D)none of these

**Q No. 2.** SLA(stereolithography) comes under \_\_\_\_\_process.

- A)casting process
- B)additive manufacturing
- C)forming process
- D)metal removal

**Q No. 3.** The first step for manufacturing any component is\_\_\_\_\_.

- A)raw materials selection
- B)designing
- C)manufacturing
- D)none of these

**Q No. 4.** Epoxies comes under which type of plastics \_\_\_\_\_.

- A)thermoplastics
- B)thermosets
- C)Elastomers
- D)none of these

**Q No. 5.** Manufacturing process are classified into \_\_\_\_\_groups.

- A)5
- B)6
- C)4
- D)7

**Q No. 6.** Cutting tools is an example of \_\_\_\_\_ steels.

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

**Q No. 7.** Medium carbon steel have \_\_\_\_\_% of carbon.

- A) between 0.10-0.25%
- B) between 0.20-0.30%
- C) between 0.25-0.60%
- D) between 0.20-0.40%

**Q No. 8.** Gears is an example of \_\_\_\_\_ type of steel.

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

**Q No. 9.** Low carbon steel have \_\_\_\_\_% of carbon.

- A) more than 0.25%
- B) less than 0.40%
- C) less than 0.25%
- D) more than 0.40%

**Q No. 10.** Steel is an alloy of \_\_\_\_\_.

- A) iron and zinc
- B) iron and carbon
- C) copper and iron
- D) tin and zinc

**Q No. 11.** Plain carbon steel is classified into \_\_\_\_\_ types.

A)1

B)2

C)3

D)4

**Q No. 12.** Material which dont have iron content in it are called as \_\_\_\_\_metals.

A)non-ferrous

B)alloys

C)metals

D)ferrous

**Q No. 13.** Material which have iron content in it are called as \_\_\_\_\_metals.

A)non-ferrous

B)alloys

C)plastic

D)ferrous

**Q No. 14.** Stainless steel is an alloy of \_\_\_\_\_.

A)iron and zinc

B)iron and carbon

C)iron and chromium

D)iron and nickel

**Q No. 15.** \_\_\_\_\_is an example of inorganic materials.

A)cement

B)lead

C)aluminium

D)rubber

**Q No. 16.** High carbon steel have\_\_\_\_\_ % of carbon.

- A)more than 0.60%
- B)less than 0.40%
- C)less than 0.25%
- D)more than 0.40%

**Q No. 17.** The function of tool post in lathe M/C is to \_\_\_\_\_.

- A)hold the workpiece
- B)drill the workpice
- C)hold the tool
- D)none of these

**Q No. 18.** The machine in which the tool is stationary and work is in motion\_\_\_\_\_.

- A)Milling M/C
- B)Lathe M/C
- C)Surface grinding M/C
- D)Drilling M/C

**Q No. 19.** Grain represents \_\_\_\_\_.

- A)bond
- B)structrure
- C)grade
- D)abrassives

**Q No. 20.** The accuracy of water jet machining that can be achieved\_\_\_\_\_.

- A)0.5mm
- B)0.05mm
- C)0.1mm
- D)0.01mm

**Q No. 21.** \_\_\_\_\_ is the process which is used to produce narrow grooves or slots on the workpieces

- A) gear milling
- B) saw milling
- C) helical milling
- D) end milling

**Q No. 22.** Lead screw is the part of which machine\_\_\_\_\_.

- A) Milling M/C
- B) Surface grinding M/C
- C) Lathe M/C
- D) Drilling M/C

**Q No. 23.** The spark generated in EDM is about\_\_\_\_\_ degree celsius

- A) 20000
- B) 30000
- C) 10000
- D) 5000

**Q No. 24.** The operation which is performed under vacuum conditions\_\_\_\_\_.

- A) laser beam
- B) electron beam
- C) plasma arc welding
- D) submerged arc

**Q No. 25.** Cutting speed in lathe is denoted by\_\_\_\_\_.

- A) N
- B) V
- C) S
- D) R

## CONTROL SYSTEM

**Q No. 1.** Which of the following element is not an Electrical Based System?

- A)Resistor
- B)Spring
- C)Capacitor
- D)Inductor

**Q No. 2.** A closed loop system is distinguished from open loop system by which of the following ?

- A)Servomechanism
- B)Feedback
- C)Output pattern
- D)input pattern

**Q No. 3.** Electrical analogous element for damper element (force-voltage analogy) in mechanical translation system is\_\_\_\_\_

- A)capacitor
- B)inductor
- C)resistor
- D)any of the above

**Q No. 4.** By using which of the following elements, mechanical translational systems are obtained?

- A)mass element
- B)spring element
- C)dash-pot
- D)all of the above

**Q No. 5.** When the initial conditions of a system are specified to be zero it implies that the system is?

- A)input reference signal is zero
- B)zero stored energy
- C)no initial movement of moving parts
- D)Zero initial condition -system is at rest and no energy is stored in any of its components

**Q No. 6.** Which of the following is one of the basic element of Mechanical Based System?

- A)Resistor
- B)Capacitor
- C)Inductor
- D)Mass

**Q No. 7.** The Transfer Function of a system can be used to study its

- A)Transient behavoiur only
- B)Steady state behaviour only
- C)Transient and steady state behaviour only
- D)none of these

**Q No. 8.** What is a Force balancing equation of a dash-pot element?

- A) $B \frac{d^2x}{dt^2}$
- B) $B \frac{dx}{dt}$
- C) $B *x$
- D)none of the above

**Q No. 9.** The device which converts rotational displacement in to voltage is called\_\_\_\_\_

- A)Rotational potentiometer
- B)Translational Potentiometer
- C)Potentiometer
- D)DC Motor

**Q No. 10.** The device which converts linear displacement in to voltage is called\_\_\_\_\_

- A)Translational Potentiometer
- B)Rotational potentiometer
- C)Potentiometer
- D)DC Motor

**Q No. 11.** In an automatic control system which of the following elements is not used ?

- A)Error detector
- B)Final control element
- C)Sensor
- D)Oscillator

**Q No. 12.** Which of the following is not a final control element.

- A)Control valve
- B)Potentiometer
- C)Electro-pneumatic converter
- D)Servomotor

**Q No. 13.** Which one of the following is used as a error detector in control system?

- A)Potentiometer
- B)DC motor
- C)Servomotor
- D)comparator

**Q No. 14.** Which of the following is the input to a controller ?

- A)Servo signal
- B)Desired variable value
- C>Error signal
- D)Sensed signal

**Q No. 15.** What is the Name of the System If  $\xi=1$  in Time response of 2nd Order control system ?

- A)undamped system .
- B)under damped system.
- C)over damped system.
- D)critically damped system.

**Q No. 16.** Which among the following is represented by a ramp input signal?

- A)Position
- B)Force
- C)Velocity
- D)Acceleration

**Q No. 17.** At which frequency does the magnitude of the system becomes zero dB?

- A)Resonant frequency
- B)Cut-off frequency
- C)Gain crossover frequency
- D)Phase crossover frequency

**Q No. 18.** What is the Name of the System If  $\xi > 1$  in Time response of 2nd Order control system ?

- A)undamped system .
- B)under damped system.
- C)over damped system.
- D)critically damped system.

**Q No. 19.** What is the objective of the Combution control in Boiler?

- A)to maintain Air feul ratio
- B)to main fuel rate
- C)To minimize the air flow rate
- D)to maintain the level of fuel

**Q No. 20.** The algebraic difference between the real value and ideal value of the measured signal is called\_\_\_\_\_

- A)Error
- B)manipulate variable
- C)controlled variable
- D)dynamic variable

**Q No. 21.** Why water is used in boilers?

- A)to generate Power
- B)to generate Electricity
- C)to generate Steam
- D)to generate current

**Q No. 22.** Which of the following process control has the capacity control multivariable processes with interaction between elements?

- A)DDC
- B)Batch
- C)Supervisory
- D)Feedforward

**Q No. 23.** The device which converts physical quantity into electrical signal is

- A)Signal conditioner
- B)Display
- C)Sensor
- D)Amplifier

**Q No. 24.** Which of the following is/are characteristic/s of mechatronic products and systems?

- A)Functional interaction between mechanical, electronic and information technologies
- B)Spacial interaction of subsystems in one physical unit
- C)Intelligence related to the control functions of the mechatronics system
- D)All of the above

**Q No. 25.** Which of the following terms indicates the operating mechanism of the mechatronics system?

- A)complex
- B)simple
- C)tedious
- D)difficult

## MECHANICS OF MACHINE

**Q No. 1.** Cars, Roller skates, Door knobs, Gears are example of \_\_\_\_\_ simple machine

- A)Lever
- B)Pulleys
- C)Incline Plane
- D)Wheel and Axle

**Q No. 2.** These two parts act as one simple machine. They roll and are found on cars, bikes and wheelbarrows.

- A)Screw
- B)Wheel and Axle
- C)Lever
- D)Inclined Plane

**Q No. 3.** Law of Lifting machine is expressed by the Formula  $P=mW+C$  where Mechanical Advantage =  $1/m$ . If mechanical advantage is 28 the the Formula can be expressed as

- A) $P = 0.025W+C$
- B) $P=0.036W+C$
- C) $P=0.063W+C$
- D) $P=0.052W+C$

**Q No. 4.** A heavy object could be rolled up this simple machine, instead of lifting it straight up. Using this simple machine can save effort, although the object must usually cover more distance if this simple machine is used.

- A)Screw
- B)Wheel and Axle
- C)Lever
- D)Inclined Plane

**Q No. 5.** The cam and follower without a spring forms a

- A)lower pair
- B)higher pair
- C) self closed pair
- D)force closed pair

**Q No. 6.** Which the statement not related to Four Bar Chain?

A)The link which connects the crank and lever is called Follower.

B)The link which makes a partial rotation or oscillates is known as lever

C)The fixed link is known as frame

D)The shortest link, will make a complete revolution relative to the other three links, such a link is known as crank or driver.

**Q No. 7.** Which the statement not related to Four Bar Chain?

A)The link which connects the crank and lever is called coupler.

B)The link which makes a partial rotation or oscillates is known as lever or rocker

C)The fixed link is known as Follower

D)The shortest link, will make a complete revolution relative to the other three links, such a link is known as crank or driver.

**Q No. 8.** The mechanism used in the following application( Feed mechanisms, Lifting jacks, Clocks, Watches and counting devices) is \_\_\_\_\_

A)Geneva Mechanism

B)Slider Crank Mechanism

C)Ratchet Pawl Mechanism

D)Automated Clever mechanism

**Q No. 9.** A slider-crank mechanism which converts rotary motion into linear motion is achieved by connecting a \_\_\_\_\_ and a \_\_\_\_\_ with a rod.

A)Slider,Crank

B)Bolt,Nut

C)Wheel and Axle

D)Screw, Nut

**Q No. 10.** In Automated Clever Crank Mechanism the Slider is replaced by

A)Belt

B)Pulley

C)Toothed Gear

D)Rope

**Q No. 11.** An automation clever mechanism that converts crank rotation into linear motion and makes the linear motion stroke \_\_\_\_\_ that of the original stroke.

- A) Twice
- B) Thrice
- C) Four times
- D) Five times

**Q No. 12.** Which of the Following Shape is related to timing Belt?

- A) Rectangular cross section
- B) Trapezoidal in cross section
- C) Trapezoidal and round tooth shape
- D) Circular cross section

**Q No. 13.** In horizontal Flat belt drive, it is customary to use \_\_\_\_\_

- A) Bottom side of belt drive as slack side
- B) Top side of belt drive as slack side
- C) Idler pulley
- D) None of the above

**Q No. 14.** Which of the drive is a positive drive

- A) Toothed belt
- B) Flat belt
- C) V belt
- D) Round belt

**Q No. 15.** Calculate the driven shaft speed & torque of the chain drive system shown  
Driven Shaft Speed: \_\_\_\_\_ (RPM)

- A) 300
- B) 600
- C) 1200
- D) 1800

**Q No. 16.** A chain should be replaced when its length becomes \_\_\_\_\_ longer than the original

A)20 mm

B)40 mm

C)0.03

D)0.1

**Q No. 17.** Which of the following chains are used for transmission of power, when the distance between the centres of shafts is short?

A)Chain with oval links

B)Closed joint chain

C)Detachable chain

D)Block chain

**Q No. 18.** In worm and worm wheel , the shaft axes are at \_\_\_\_\_

A)90 degrees

B)45 degrees

C)180 degrees

D)270 degrees

**Q No. 19.** Equipment used to convert the output shaft revolutions of the main engine to those required is known as \_\_\_\_\_

A)Chain Drive

B)Belt Drive

C)Reduction Gear Box

D)Rope Drive

**Q No. 20.** Animal and Vegetable oil possess

A)Good Oiliness

B)Poor oiliness

C)Optimum Oiliness

D)None of the above

**Q No. 21.** Identify liquid lubricant from the following

- A) Graphite
- B) Mo Disulphide
- C) Lubricating oil
- D) Soapstone

**Q No. 22.** Which one of the ball bearing is mounted on the rotating shaft and tends to rotate the shaft?

- A) Inner Race
- B) Outer Race
- C) Cage
- D) Rolling element

**Q No. 23.** A sliding bearing which operates without any lubricant present, is called

- A) Zero film bearing
- B) Boundary lubricated bearing
- C) Hydrodynamic lubricated bearing
- D) Hydrostatic lubricated bearing

**Q No. 24.** Which Follower belongs to the category of types of follower motion?

- A) Knife edge follower, Roller follower, Flat follower, Spherical follower
- B) Reciprocating motion type follower, Oscillatory motion type follower
- C) Radial follower, Offset follower
- D) Knife edge follower, Roller follower, Flat follower, Mushroom follower

**Q No. 25.** The main function of the guideway is to make the cutting tool or machine tool operative element moves along \_\_\_\_\_.

- A) Predetermined Path
- B) Rotating Path
- C) Oscillating Path
- D) Reciprocating Path

## **PROGRAMMABLE LOGIC CONTROLLER**

**Q No. 1.** PLC stands for \_\_\_\_\_

- A) Programmable Ladder Controller
- B) Program Low Controller
- C) Programmable Logic Controller
- D) Programmable Logic Converter

**Q No. 2.** PLC I/O systems provides an interface between \_\_\_\_\_ and \_\_\_\_\_.

- A) Input devices and the CPU
- B) Field Devices and the CPU
- C) Output modules and field devices
- D) Input modules and output modules

**Q No. 3.** Discrete output interface modules send signals to field devices that are \_\_\_\_\_

- A) Digital devices
- B) Analog devices
- C) Two-state devices
- D) Digital or Two state Device

**Q No. 4.** A discrete input signal is considered valid if the signal is \_\_\_\_\_

- A) Is a two-state signal
- B) Is successfully change from AC to DC through the bridge rectifier
- C) For an AC signal, if it is between 80 & 132 VAC
- D) If it is continuous

**Q No. 5.** Number of contact per matrix is limited to

- A) 3\*3
- B) 4\*4
- C) 3\*4
- D) 4\*5

**Q No. 6.** Which of the following is not an input device

- A) push buttons
- B) Sensors
- C) Limit Switch
- D) Timer

**Q No. 7.** The abbreviations NO and NC represents the electrical state of switch contacts when\_\_\_\_\_.

- A) Power is applied
- B) Power is not applied
- C) The switch is actuated
- D) The switch is not actuated

**Q No. 8.** Status of input devices are stored in \_\_\_\_\_ Register.

- A) Output single
- B) Input single
- C) Output group
- D) Input group

**Q No. 9.** Multiple input timer includes

- A) Enable
- B) Run
- C) Reset
- D) All of the above

**Q No. 10.** Holding register is also known as\_\_\_\_\_.

- A) Input register
- B) Output Register
- C) Working Register
- D) Group Register

**Q No. 11.** Operation of High speed counters are\_\_\_\_\_

- A)Independent of scan time
- B)Dependent on scan time.
- C)User dependent
- D)program dependent

**Q No. 12.** The major advantage of retentive timer is \_\_\_\_\_.

- A)It has only one input
- B)It loses accumulated time
- C)It has only on delay
- D)It retains accumulated time

**Q No. 13.** \_\_\_\_\_timer turns off the output after the preset time

- A)ON delay timer
- B)OFF delay Timer
- C)Reset
- D)None of the above

**Q No. 14.** A timer that initiates an action at a specified time after enable input is made high is called \_\_\_\_\_.

- A)ON delay timer
- B)OFF delay Timer
- C)Retentive timer
- D)Pulse repetitive Timer

**Q No. 15.** The greater than programming abbreviation is \_\_\_\_\_

- A)GEQ
- B)GET
- C)GTQ
- D)GRT

**Q No. 16.** Suppose the greater than or equal instruction has the integer 19 stored in source A and the integer 23 stored in source B then the output coil \_\_\_\_\_.

- A)turns On
- B)turns Off
- C)remains in previous state
- D)Toggle output

**Q No. 17.** Instruction used to convert Binary value to BCD is\_\_\_\_\_.

- A)BN/BCD
- B)DN/BCD
- C)BCD/BN
- D)BCD/DN

**Q No. 18.** In PLC division function Destination 1'st Register contains \_\_\_\_\_.

- A)Reminder
- B)Quotient
- C)Divisor
- D)Dividend

**Q No. 19.** Instruction used to convert BCD value to Binary is \_\_\_\_\_

- A)BN/BCD
- B)DN/BCD
- C)BCD/BN
- D)BCD/DN

**Q No. 20.** FAL stands for\_\_\_\_\_.

- A)Fast Access Logic
- B)First And Last
- C)File Access Last
- D)File Arithmetic and Logic

**Q No. 21.** The SWEEP function is used to\_\_\_\_\_.

- A)Scan the program at fixed intervals
- B)Reduce scan time
- C)Increase scan time
- D)Independent of scan time

**Q No. 22.** \_\_\_\_\_ function moves data sequentially from a specified portion of a large listing of data to a single register.

- A)Table to file Move function
- B)File to file move
- C)File to table move
- D)Table to Register

**Q No. 23.** \_\_\_\_\_ function sets all the bits in a register (or) word to zero.

- A)CLR
- B)FAL
- C)ONS
- D)CPT

**Q No. 24.** In a PLC sequencer function has \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, inputs.

- A)Step, Enable, Reset
- B)Shift, Data in, Enable
- C)Step, Data in, Enable
- D)Shift, Reset, Data in

**Q No. 25.** Shift right function has got three inputs \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

- A)Step, Enable, Reset
- B)Shift, Data in, Enable
- C)Step, Data in, Enable
- D)Shift, Reset, Data in

## PNEUMATICS AND HYDRAULICS

**Q No. 1.** The limitation of Electrical power transmission \_\_\_\_\_

- A) Impossible to obtain a precise control of actuator velocity
- B) Elements require special treatments to protect them against rust, corrosion, dirt, etc.
- C) Heat dissipation problem
- D) Un even force distribution

**Q No. 2.** In fluid power the fluid can be either \_\_\_\_\_ or \_\_\_\_\_.

- A) Liquid, Gas
- B) Liquid, Solid
- C) Liquid
- D) Gas

**Q No. 3.** Electrical power transmission suitable for \_\_\_\_\_

- A) over relatively short distance with motion & force
- B) Over greater distance than mechanical type
- C) over long distance
- D) Over intermediate distance

**Q No. 4.** Hydraulic power transmission suitable for

- A) Over long distance
- B) over relatively short distance with motion & force
- C) Over greater distance than mechanical type
- D) Over intermediate distance

**Q No. 5.** The property of resistance to flow, is called as \_\_\_\_\_ .

- A) Density
- B) Pascals law
- C) Viscosity
- D) Orifice Plate

**Q No. 6.** Viscosity of liquid \_\_\_\_\_ with the increase in temperature.

- A)Not Equal
- B)equal
- C)increases
- D)decreases

**Q No. 7.** Branch of a science, which deals with the characteristics and properties of fluid, when it is in rest condition is known as \_\_\_\_\_.

- A)Pascals Law
- B)Dynamics
- C)Hydro-dynamics
- D)Hydrostatics

**Q No. 8.** Specific gravity = \_\_\_\_\_

- A)Mass/Volume
- B)Weight/Volume
- C)Liquid/water
- D) $1/\rho$

**Q No. 9.** The service life of pneumatic system is considerably reduced by \_\_\_\_

- A)excessive pressure
- B)Insufficient pressure
- C)working hours
- D)moisture

**Q No. 10.** A quick and simple method to determine the diameter of pipeline, is done by using a \_\_\_\_\_.

- A)Nomogram
- B)Threaded connection
- C)Pore size
- D)Contamination

**Q No. 11.** Deliquescent drying is also known as \_\_\_\_

- A) Absorption drying
- B) Adsorption drying
- C) Chemical process
- D) Refrigerated

**Q No. 12.** In adsorption dryers the drying agent is \_\_\_\_\_

- A) oil
- B) Flux
- C) Silica gel
- D) dehydrated chalk

**Q No. 13.** The function of pressure regulator is to \_\_\_\_

- A) remove the excessive moisture
- B) remove the dirt
- C) regulate the pressure constant
- D) achieve the more pressure

**Q No. 14.** The pressure required to operate the system is known as \_\_\_\_

- A) constant pressure
- B) working pressure
- C) delivery volume
- D) operating pressure

**Q No. 15.** \_\_\_\_\_ Filter protects pump from contamination.

- A) pressure line
- B) Pump inlet
- C) return flow
- D) suction line



**Q No. 16.** Identify the symbol given:

- A) SAC
- B) Intensifier
- C) DAC
- D) telescopic cylinder

**Q No. 17.** Which of the following is a symbol of Pressure Guage?

- A)
- B)
- C)
- D)

**Q No. 18.** When large forces are required and only small cylinder dimensions are possible\_\_\_\_\_ cylinder is used.

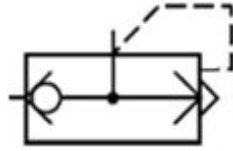
- A) Tandem Cylinder
- B) SAC
- C) telescopic cylinder
- D) DAC

**Q No. 19.** The stroke length of SAC is limited to \_\_\_ mm.

- A) 100
- B) 10
- C) 1
- D) 1000

**Q No. 20.** Dentist's Drill is one of the application of \_\_\_\_\_.

- A) Pneumatic Motor
- B) Electric Motor
- C) Hydraulic Pump
- D) Hydraulic Motor



**Q No. 21.** Identify the symbol given:

- A) Shuttle Valve
- B) Two Pressure Valve
- C) Check Valve
- D) Quick Exhaust Valve

**Q No. 22.** Hydraulic device that stores energy in the form of fluid pressure, is known as \_\_\_\_\_.

- A) power pack
- B) accumulator
- C) cylinder
- D) Compressor

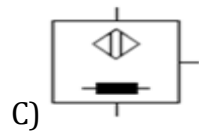
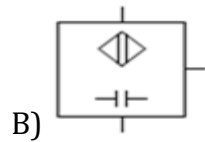
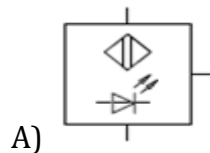
**Q No. 23.** Pressure converter works on both Oil & \_\_\_\_

- A) electricity
- B) Air
- C) water
- D) oil

**Q No. 24.** The optical proximity sensors are using the property of \_\_\_\_

- A) Light
- B) Weight/Volume
- C) Magnet
- D) Mechanical

**Q No. 25.** Which of the following is the symbol of Inductive proximity sensor?



D)None

### **ROBOTICS**

**Q No. 1.** In industries such as all manufacturing processes are done with minimized human interventions, are generally termed as\_\_\_\_\_.

A)Automation

B)Robotics

C)Artificial intelligence

D)Mechatronics

**Q No. 2.** The most important criteria for the selection of industrial robot for right job includes\_\_\_\_\_

A)Pay load

B)Robot reach

C)Speed

D)All the Above

**Q No. 3.** \_\_\_\_\_is a adaptor which provide a precise connection between the robot wrist and the end effecto

A)Flange

B)weight

C)payload

D)speed

**Q No. 4.** The first reprogrammable manipulator robot was developed by “George C devol” in the year 1950 called as\_\_\_\_\_

- A)Unimate
- B)Versatran robot
- C) Universal
- D)Asia

**Q No. 5.** \_\_\_\_\_have open loop systems,also referred as bang-bang robots.

- A)Non-servo Robots
- B)Servo Robots
- C)Programmable Robots
- D)Non-Programmable Robots

**Q No. 6.** A \_\_\_\_\_ has more than six degrees of freedom (DOF) than those required to accomplish a given motion task

- A)Planar Mnaipulator
- B)spatial manipulator
- C)Reduntant Manipulator
- D)none

**Q No. 7.** A robot can only perform within the confines of this \_\_\_\_\_.

- A)workspace
- B)Workcell
- C)Work Envelope
- D)Work manner

**Q No. 8.** The anatomy of robot is also known as\_\_\_\_\_

- A)structure of robot.
- B)Machine anatomy
- C)Shape of robot
- D)Parts of Robot

**Q No. 9.** The factors required for selection and design to ensure proper gripping includes\_\_\_\_\_

A)Orientation & Dimensions

B)Accessibility

C)Object Shape

D)All the above

**Q No. 10.** A \_\_\_\_\_ is an example of a fluid link.

A)hydraulic brake

B)Binary

C)Chain

D)belt drive

**Q No. 11.** D-H parameters are described by \_\_\_ parameters

A)two

B)three

C)four

D)five

**Q No. 12.** The robot has \_\_\_- number of joints and \_\_\_- number of links.

A)"N" and "N+1"

B)"N" and "N-1"

C)"N+1"and "N-1"

D)"N+1"and "N+0"

**Q No. 13.** Kinematics is about simply describing \_\_\_\_\_.

A)Animation

B)Motion

C)Anatomy

D)Structure

**Q No. 14.** The \_\_\_\_\_ between the normals is measured in a plane normal to the joint axis and it is Variable if joint is revolute.

- A) Link Length [a]
- B) Link Angle or Link Twist ( $\alpha$ )
- C) Joint Length or Link Offset (d)
- D) Joint Angle ( $\theta$ )

**Q No. 15.** The study of \_\_\_\_\_ is often referred to as the “geometry of motion.”

- A) kinematics
- B) Robotics
- C) Kinetics
- D) Friction

**Q No. 16.** Expand GUI

- A) Graphical User Interface
- B) Geometrical User Interrupt
- C) Geometry User Interface
- D) Graphical Unix Interface

**Q No. 17.** \_\_\_\_\_ are used in order to produce mechanical movement in robots

- A) Range Sensors
- B) Proximity
- C) Actuators
- D) Tactile

**Q No. 18.** A \_\_\_\_\_ protocol is a system of rules that allows two or more entities of a communications system to transmit information via any kind of variation of a physical quantity

- A) Cloud
- B) PLC
- C) Digital Interface
- D) Communication

**Q No. 19.** \_\_\_\_\_ term refers to the use of compressed gases to drive (Power ) to the robot device

- A)Hydraulic
- B)Piezoelectric
- C)Photosensitive
- D)Pneumatic

**Q No. 20.** \_\_\_\_\_sensors are used to identify objects for pick and place purpose

- A)Range detectors
- B)Infrared sensors
- C)Vision sensors
- D)Photo metric Sensors

**Q No. 21.** This method is preferred where a lot of instructions need to be written and tested before being deployed in real life.

- A)Offline Programming
- B)Simple Programming
- C)Training
- D)Lead Through Programming

**Q No. 22.** From which of the following is robot programming method

- A)Manual method
- B)Lead through method
- C)Walk through method
- D)All of the Above

**Q No. 23.** This mode is used to accomplish overall supervisory control

- A)Edit
- B)Monitor
- C)Run
- D)Suppressive

**Q No. 24.** \_\_\_\_\_ is fed to the end of the arm while doing welding

- A) Gun
- B) Metal Wire
- C) Torch
- D) Interfacing

**Q No. 25.** This Mastering uses Vision and a grid to master the joints

- A) Position Mastering
- B) Single Axis Mastering
- C) Zero Degree mastering
- D) Vision Mastering

### **AUTOMATED PRODUCTION SYSTEM**

**Q No. 1.** In automation principle, usa stands for the following

- A) Understand the existing process
- B) Simplify the process
- C) Automate the process
- D) All of the above

**Q No. 2.** Flexible automation is designed for the following

- A) To manufacture a variety of products
- B) Low production rates
- C) Varying product design and demand.
- D) All of the above

**Q No. 3.** What are the strategies of automation

- A) Specialization of operations
- B) Increased flexibility
- C) On line inspection
- D) All of the above

**Q No. 4.** What are the disadvantages of automation

- A) Large initial investment
- B) Increase in unemployment
- C) Both A & B
- D) None of the Above

**Q No. 5.** Automation is used for the following

- A) Improving productivity
- B) Quality
- C) Other measure of performance
- D) All of the above

**Q No. 6.** In which type of automation special purpose equipment designed to accommodate a special class of product change, batch production medium volume

- A) Fixed Automation
- B) Programmable Automation
- C) Flexible Automation
- D) All of the above

**Q No. 7.** In which type of automation special purpose equipment is used to automate a fixed sequence of operations

- A) Fixed Automation
- B) Programmable Automation
- C) Flexible Automation
- D) All of the above

**Q No. 8.** When we have large size of workpiece & more number of workstations, which type of flow line is preferred

- A) Rotary
- B) Circle
- C) In-line
- D) Dial type

**Q No. 9.** In which type of flow line configuration, the built in storage capacity is possible to make

- A) Rotary
- B) In-line
- C) Circle
- D) Dial type

**Q No. 10.** The objective of automated flow line is

- A) to reduce the labor cost
- B) to increase the production rate
- C) to minimize the movement of parts/product
- D) All of the mentioned

**Q No. 11.** The control function which use to monitor certain quality attributes of work part is \_\_\_\_\_.

- A) Sequence
- B) Safety
- C) Quality
- D) All of the mentioned

**Q No. 12.** Asynchronous transfer method of work transport is also known as \_\_\_\_\_.

- A) Continuous
- B) Intermittent
- C) Asynchronous
- D) Power & free transfer

**Q No. 13.** In which type of flow line configuration, the work parts are indexed around a dial.

- A) Rotary
- B) Rectangle
- C) In-line
- D) Square

**Q No. 14.** A system which can produce variety of products without the time-consuming task of changing machine steps is

- A) Quick production system
- B) Quality management system
- C) Flexible manufacturing system
- D) Effective manufacturing system

**Q No. 15.** CIM is referred as

- A) Concept
- B) Technology
- C) Both A & B
- D) None of the mentioned

**Q No. 16.** The type of flexibility, the market flexibility belongs to

- A) Basic flexibility
- B) System flexibility
- C) Aggregate flexibility
- D) All of the mentioned

**Q No. 17.** The type of flexibility, thus the volume flexibility belongs to

- A) Basic flexibility
- B) System flexibility
- C) Aggregate flexibility
- D) All of the mentioned

**Q No. 18.** The type of flexibility, the material handling belongs to

- A) Basic flexibility
- B) System flexibility
- C) Aggregate flexibility
- D) All of the mentioned

**Q No. 19.** WHAT ARE THE TYPES OF AGVS

- A) Unit load carriers, towing, pallet trucks
- B) Fork trucks, and assembly line.
- C) Both A & B
- D) None of the Above

**Q No. 20.** WHAT ARE THE DIFFERENT TYPES OF AS/RS

- A) Mini-load AS/RS
- B) Person-on-board AS/RS, Deep-lane AS/RS
- C) Unit load AS/RS
- D) All of the above

**Q No. 21.** WHAT IS THE PRIMARY OBJECTIVE OF AGVS GUIDANCE SYSTEM

- A) To keep the vehicle in the pre-designated path
- B) guide path can be changed easily at low cost compared with the high cost of modifying fixed-path equipments
- C) Both A & B
- D) None of the Above

**Q No. 22.** WHAT ARE THE MAIN PRINCIPLES OF MATERIAL HANDLING PROCESS

- A) Cost principle
- B) Maintenance principle
- C) Both A & B
- D) None of the Above

**Q No. 23.** Which one of the industrial revolutions used electric energy to create mass production for the first time?

- A) 1st Industrial Revolution
- B) 2nd Industrial Revolution
- C) 3rd Industrial Revolution
- D) 4th Industrial Revolution

**Q No. 24.** Which of the following is the order of planning smart factory

- A) Theoretical approach, Smart Factory in real environment, SMART factory in virtual environment
- B) Theoretical approach, SMART factory in virtual environment, Smart Factory in real environment
- C) Smart Factory in real environment, Theoretical approach, SMART factory in virtual environment
- D) Smart Factory in real environment, SMART factory in virtual environment, Theoretical approach

**Q No. 25.** The modern system of manufacturing that integrates the abilities of humans, machines, and processes to achieve the best possible manufacturing outcome is known as

- A) Integrated Management system
- B) Quick manufacturing system
- C) Intelligent Manufacturing System
- D) Production system