

## CHI TIẾT CÂU A B Đ THI

Tên B Đ Thi: quynhnhu

Môn học : Anh văn chuyên ngành C khí\_DH

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Câu 1: \_\_\_\_\_ can be added to steel to prevent corrosion.



- A. chromium
- B. aluminium
- C. tungsten
- D. copper

Câu 2: Alloys made from copper and nickle are also \_\_\_\_\_.



- A. corrosion
- B. corrosion resistant
- C. resist corrosion
- D. easy to corrode

Câu 3: \_\_\_\_\_ can be replaced the plastic matrix to support more specialized composite systems.



- A. ceramic matrices
- B. metal matrices
- C. glass fiber matrix
- D. a and b are correct

Câu 4: \_\_\_\_\_ involve rotary movement.



- A. Wheels and rollers
- B. Wheels and trimmers
- C. Piston and pendulum of clock
- D. Piston and gears

Câu 5: The advent of the computer has greatly facilitated the use of the feedback loops in manufacturing processes.



- A. introduction
- B. advantage
- C. origin
- D. mean

Câu 6: The advent of the computer has greatly facilitated the use of the feedback loops in manufacturing processes.



- A. advantaged
- B. convenient
- C. developed

D. improved

Câu 7: X-ray machines, body scanners and life-support systems are the products made by \_\_\_\_\_.

A. medical engineering

B. medical, electrical and mechanical engineers

 C. electrical, mechanical engineers and medical experts

D. electrical and mechanical engineers

Câu 8: Metal detectors have \_\_\_\_\_ to discover the existence of piece of metal.

 A. sensors

B. automatic machines

C. automatic tools

D. senses

Câu 9: \_\_\_\_\_ moves against the fixed workpiece and cut on one stroke.

A. the lathe tool

B. the tool of machine

C. the planer tool

 D. the shaper tool

Câu 10: Controllers and associated computers also must process sensor information collected from cameras that locate objects to be grasped, or they must touch sensors on grippers that regulate the grasping force. The word “that” refers to \_\_\_\_\_.

A. grippers

B. sensors

 C. sensors on grippers

D. controller and computers

Câu 11: After the sketch has been completed to the satisfaction of the designer, the computer automatically generates \_\_\_\_\_ that directs a machining center in machining the part.

 A. a magnetic or punched tape

B. a finished draw

C. a sketch of draw

D. a magnetic or punched part

Câu 12: Industrial robots in automation are used to perform all the functions of \_\_\_\_\_.

 A. a transfer machine

B. a division of labor

C. a production of system

D. a power transfer

Câu 13: \_\_\_\_\_ will melt and soften again under heat .

A. Products of plastics

B. thermoplastics materials

C. thermosetting plastics

 D. thermoplastic objects

Câu 14: Composite materials have attractive properties, such as high thermal conductivity and \_\_\_\_\_.

A. high thermal expansion

B. a high coefficient of thermal expansion

 C. a low coefficient of thermal expansion

D. electrical conductors

Câu 15: The gradual loosening of bolts and the sagging of long- span cables are all noticeable examples of \_\_\_\_\_.

 A. creep

B. fatigue

C. torsion

D. tension

Câu 16: Electrical \_\_\_\_\_ is a branch of applied sciences.

A. power

B. property

C. energy

 D. engineering

Câu 17: The specific strength and specific stiffness of continuous carbon fiber PMCS, for example, can be \_\_\_\_\_ to conventional metal alloys.

A. vastly super

 B. superior

C. vastly better

D. supper

Câu 18: Torque is the \_\_\_\_\_ that causes rotation.

A. property of material

 B. force

C. element

D. material

Câu 19: The process in which the joint is obtained by the application of bolts is known as \_\_\_\_\_.

A. riveting

B. soldering

 C. bolting

D. brazing

Câu 20: The disadvantages of metal are \_\_\_\_\_.

A. strength and toughness

B. expensive cost and not attractive

-  C. heavy and easy to corrode
- D. Heavy and corrosion - resistant

Câu 21: When a rod is bent, for example, one side of it is \_\_\_\_\_ to a tensional force, and the other side is compressed.

- A. stretched
- B. strengthen
-  C. sustained
- D. applied

Câu 22: Mild steel is recommended for components such as rivets and bolt which \_\_\_\_\_.

- A. must be strong in tension
- B. must be strong in compression.
-  C. must be strong in shear.
- D. which must be strong in torsion.

Câu 23: Who works as a person ensure that the production is efficient and the faults which occur in the production are corrected?

- A. Mainternance engineers
-  B. Production engineers
- C. Production planing engineers
- D. Operating engineers

Câu 24: Treating by heat usually consists of heating the metal or alloy to a selected temperature below its melting point and then cooling it at a certain rate to obtain those properties, which are required. It in this sentence means\_\_\_\_\_.

- A. treating by heat
- B. heating the metal or alloy
- C. a selected temperature
-  D. metal or alloy

Câu 25: A tool of boring machines that is used to makes a drilled hole greater is called the \_\_\_\_\_.

- A. boring machine
-  B. boring cutter
- C. boring jig corer
- D. boring tool

Câu 26: Modern science and technology allows us to make things levitate in the air.

- A. rise and fall
- B. rise and disappear
- C. raise and stayed
-  D. rise and exist

Câu 27: \_\_\_\_\_were essential ingredients in the automation of factories in the 18<sup>th</sup> century.

- A. Feedback, the development of machine tools, and transfer machine

- B. Automatic control, the development of specialized tools, and the division of work into smaller tasks
- C. Mechanisms, the development of specialized tools, and the division of work into smaller tasks
-  D. Feedback control, the development of specialized tools, and the division of work into smaller tasks

Câu 28: Metal objects can be broken down and metals recycled.

- A. damage
-  B. damaged
- C. divided
- D. divide

Câu 29: A \_\_\_\_\_ is a computer controlled machine that is programmed to move, manipulate objects, and accomplish work while interacting with its environment

-  A. robot
- B. CAD or CAM technology
- C. punched paper
- D. magnetic tape

Câu 30: \_\_\_\_\_ is the decrease in volume that results from the application of pressure.

- A. Tension
- B. Torsion.
-  C. Compression.
- D. Compressive strength

Câu 31: The transfer machine is a device used to \_\_\_\_\_.

-  A. move a workpiece from one specialized machine tool to another
- B. move a product from one specialized machine tool to another
- C. move a workpiece from one specialized place to another
- D. move a workpiece from one specialized transfer machine tool to another

Câu 32: \_\_\_\_\_ is carried out to make metals become harder.

- A. Heating
-  B. Hardening
- C. Tempering
- D. Annealing

Câu 33: A robot arm can telescope or lengthen by \_\_\_\_\_.

- A. sliding cylindrical sections one over another make the arm longer.
- B. sliding cylindrical sections one over another to lengthen the arm .
- C. sliding cylindrical sections one over another to shorten the arm.
-  D. sliding cylindrical sections one over another.

Câu 34: In the 1920s the auto industry combined \_\_\_\_\_ into an integrated system of production.

- A. these concepts



- B. elements of automation
- C. CAD and CAM technologies
- D. Automation technologies

Câu 35: The reciprocating motion of a piston is \_\_\_\_\_ into a rotary motion of a crankshaft.

- A. converted
- B. altered
- C. changed



- D. all are correct

Câu 36: Once they have been taken from their moulds, they are easy to melt or soften again under heat. They means \_\_\_\_\_.

- A. plastics
- B. thermoplastics
- C. thermosetting plastics
- D. metal



Câu 37: Paper trimmers have \_\_\_\_\_.

- A. rotary movement
- B. linear movement
- C. oscillating movement
- D. reciprocating movement



Câu 38: A feedback loop takes whatever pre-programmed action is necessary to maintain the measured quantity \_\_\_\_\_.

- A. within the limits of the acceptable standard
- B. with the acceptable standards
- C. without the acceptable standard
- D. without the limits of the acceptable standard

Câu 39: The inspiration for the design of a robot manipulator is \_\_\_\_\_.



- A. the human
- B. the human arm
- C. the automation
- D. the automated industry

Câu 40: MMCs is the short form of \_\_\_\_\_.



- A. Metal matrices composite
- B. Matrices of metal composites
- C. Metal matrix composites
- D. Metal matrix composite

Câu 41: \_\_\_\_\_ originally designed only to perform simple tasks in environments dangerous to human workers.



- A. Industrial robots
- B. Automation technology
- C. Computer technology
- D. Transfer machines

Câu 42: Aluminium bronze is an /a \_\_\_\_\_.

- A. an alloy of bronze and aluminium
- B. a combination of aluminium and brass
- C. an alloy of lead and aluminium



- D. a mixture of copper and aluminium.

Câu 43: In 1975, Victor Scheinman, \_\_\_\_\_, developed a manipulator known as the Programmable Universal Manipulation Arm .



- A. a mechanical engineer
- B. an electronic engineer
- C. an electrical engineer
- D. a civil engineer

Câu 44: \_\_\_\_\_ is the reduction of a manufacturing or service process into its smallest independent steps.

- A. Automation element



- B. Division of labor
- C. Division of automation
- D. Mechanization of the factory

Câu 45: \_\_\_\_\_ makes metals soft to machine easily.



- A. Annealing
- B. Hardening
- C. Heating
- D. Tempering

Câu 46: Which group of materials is very useful for pipes and many objects of containing?

- A. plastics
- B. thermoplastics
- C. thermosetting plastics
- D. metallic materials



Câu 47: A cam converts \_\_\_\_\_ into the reciprocating motion required to operate the valves.



- A. the rotary movement of the engine
- B. the linear movement of the engine
- C. the oscillating movement of the engine
- D. the rotary movement of the crankshaft

Câu 48: \_\_\_\_\_ objects are easy to melt than \_\_\_\_\_ ones.

- A. plastic / thermoplastic
- B. thermoplastic / plastic
- C. thermosetting plastic / thermoplastic
-  D. thermoplastic / thermosetting plastic

Câu 49: \_\_\_\_\_ is composed of a lot of small grains of abrasive, bonded together.

-  A. the grinding wheel
- B. the grinding machine
- C. the grinding cutter
- D. the wheel

Câu 50: Any robot designed to move in an unstructured or unknown environment will require \_\_\_\_\_ to avoid preventer.

-  A. multiple sensors and controls
- B. multiple joints of arm
- C. multiple electric motors
- D. multiple grippers

Câu 51: A base material that surrounds the fibers and is tightly bound to the fiber in composites is known as \_\_\_\_\_.

- A. the matrix
- B. the glass –fiber
-  C. the composite matrix
- D. the matrix composite

Câu 52: Composites have a low coefficient of thermal expansion.

- A. Composites expand at high temperature.
-  B. Composites don't expand much when heated.
- C. Composites do not expand when heated
- D. Composites expand at low temperature.

Câu 53: The motions of \_\_\_\_\_ are controlled by punched paper or magnetic tapes.

- A. feedback loops
- B. computers and feedback loops
- C. feedback loop and transfer power
-  D. numerical controlled machines.

Câu 54: If a metal has a ductile property, it can be \_\_\_\_\_ into wire.

- A. draw
-  B. stretched
- C. stretch

D. drawn

Câu 55: Brass is made up of \_\_\_\_\_.

A. copper and tin

 B. copper and zinc

C. copper, tin and zinc

D. copper, lead and zinc

Câu 56: All mechanisms consist of \_\_\_\_\_ basic kinds of movement.

A. five

B. three

C. two

 D. four

Câu 57: It suppresses the least desirable properties.

A. adds

B. comprises

C. presses

 D. removes

Câu 58: When engineering workers weld metals, they can use \_\_\_\_\_ to protect their eyes.

A. the shield

 B. all a, b, and c

C. the goggles

D. the guard

Câu 59: Feedback loops are key elements \_\_\_\_\_.

A. in production processes

B. in manufacture processes

C. in automotive processes

 D. in automated processes

Câu 60: As improved manufacturing techniques are developed, it will become possible to produce composite materials at higher volumes and at a lower cost than is now possible.

 A. quantities

B. qualities

C. properties

D. applications

Câu 61: What can be harder than wood products or softer than rubber ones because of the extraordinary qualities of material?

A. metallic materials

B. plastic materials

C. thermoplastics

 D. plastic articles

Câu 62: Carbon steels have a greater carbon proportion than \_\_\_\_\_.

A. mild steels

B. wrought iron

C. cast iron

 D. both a and b

Câu 63: \_\_\_\_\_ moves a tool past a stationary workpiece.

A. a planer

 B. a shaper

C. a milling machine

D. a lathe

Câu 64: Pure copper is \_\_\_\_\_ than the alloys that made by mixing copper and aluminum.

A. strong

B. weak

C. stronger

 D. weaker

Câu 65: Composites are used to develop superior \_\_\_\_\_ for aerospace, automotive and recreational applications.

 A. products

B. production

C. procedure

D. produces

Câu 66: \_\_\_\_\_ has a stationary cutting tool in the machining process.

A. a grinder

B. a lathe

 C. a planer

D. a shaper

Câu 67: The two main groups of welding are \_\_\_\_\_ and \_\_\_\_\_.

A. riveting/ bolting

 B. pressure welding / heat welding

C. brazing / soldering

D. gas welding / arc welding

Câu 68: A process that cut threads in a drilled hole is called \_\_\_\_\_.

 A. tapping

B. boring

- C. lapping
- D. grinding

Câu 69: \_\_\_\_\_ consists of heating the metal to a selected temperature below its melting point and cooling it at a certain rate to get the required properties.

- A. Alloying the metals
-  B. Heat treatment
- C. Extracting
- D. Heating

Câu 70: \_\_\_\_\_ is used to produce high quality welded products at a rapid rate.

- A. Thermite welding
-  B. Laser welding
- C. Resistance welding
- D. Laser and thermite welding

Câu 71: Automobile and aeronautical engineerings are two groups of \_\_\_\_\_.

- A. mechanical engineer
- B. machining engineering
-  C. mechanical engineering
- D. medical engineering

Câu 72: \_\_\_\_\_ improved in the latter half of the eighteenth century.

- A. the division of automation
- B. the division of labor
-  C. the division of labor in automation
- D. the division of mechanization in automation

Câu 73: In the fields of communication, aviation, and astronautics, for example, such devices as automated guidance and control systems are used to perform various operations much faster or better than could be accomplished by humans.

- A. worked
- B. finish
- C. did
-  D. operated

Câu 74: Brazing, soldering, riveting and electric arc welding are \_\_\_\_\_.

-  A. metal joining methods
- B. metal welding methods
- C. metal electric welding methods
- D. metal heat welding methods

Câu 75: In gas welding process, \_\_\_\_\_ is applied directly to the metal edges to be joined and to a filler metal.

-  A. the flame

- B. the gas
- C. the pressure
- D. the heat

Câu 76: \_\_\_\_\_ is faster and tends to reduce distortion in the weld.

- A. Thermite welding
- B. Gas welding
- C. Resistance welding
-  D. Arc welding

Câu 77: When a rod is bent, for example, one side of it is stretched, and the other side is \_\_\_\_\_.

- A. pressured
-  B. compressed
- C. forced
- D. tended

Câu 78: The word "robot" has been used since to refer to a machine \_\_\_\_\_.

- A. that presents work to assist people or work that humans find difficult or undesirable.
-  B. performing work to support people or work that humans find difficult or undesirable
- C. that performs simple work.
- D. that humans find difficult or undesirable.

Câu 79: Creep extended over a long time eventually leads to\_\_\_\_\_.

- A. the permanent deformation
- B. the elastic deformation
-  C. the rupture of the material
- D. the progressive fatigue

Câu 80: \_\_\_\_\_ require a continuous supply of either DC. or AC.

-  A. Arc welding processes
- B. Gas welding processes
- C. Resistance welding processes
- D. Thermite welding processes

Câu 81: Sensors on grippers adjust \_\_\_\_\_.

-  A. the gripping force
- B. the external force
- C. the moving force
- D. the gravity force

Câu 82: Currently, \_\_\_\_\_ are superior to make the cover of aircraft.

- A. aluminum alloys

- B. tungsten alloys
-  C. non- metallic composites
- D. metallic composites

Câu 83: In 1975, Victor Scheinman developed \_\_\_\_\_ known as the Programmable Universal Manipulation Arm .

- A. a truly flexible purpose manipulator
- B. a truly fixable multipurpose manipulator
-  C. a truly flexible multipurpose manipulator
- D. a truly flexible multipurpose manipulation

Câu 84: In \_\_\_\_\_, heat is produced by the chemical reaction of aluminium powder and iron oxide.

- A. resistance welding process
- B. gas welding process
-  C. thermite welding process
- D. arc welding process

Câu 85: \_\_\_\_\_ compares physical quantities with a pre-established standard.

-  A. A feedback loop
- B. A feedback principle
- C. A automated thermostat
- D. A CAD and CAM technology

Câu 86: \_\_\_\_\_ enables a designer to endow a machine with the capacity for self- correction.

- A. The feedback loop
-  B. The feedback principle
- C. The automated thermostat
- D. The CAD and CAM technology

Câu 87: The reciprocating motion of a piston is \_\_\_\_\_ into a rotary motion of a crankshaft.

- A. change
-  B. converted
- C. alter
- D. recycled

Câu 88: Robots, such as the National Aeronautics and Space Administration planetary rovers, require a multitude of sensors and powerful onboard computers\_\_\_\_\_.

-  A. to process the complex information
- B. to perform the complex information
- C. to process the simple information
- D. to perform the simple information

Câu 89: Creep is a slowly \_\_\_\_\_.

- A. progressing, elastic deformation

- B. gradual , elastic deformation
-  C. progressing, permanent deformation
- D. fracture , permanent deformation

Câu 90: The equipment of \_\_\_\_\_ is portable.

- A. Resistance welding
- B. Thermite welding
-  C. Gas welding
- D. Arc welding

Câu 91: Under \_\_\_\_\_, the material does not return completely to its original condition.

-  A. tension is greater than the material elastic limit.
- B. tension is smaller than the material elastic limit
- C. tension is larger than the material elasticity
- D. tension is greater than the material elasticity

Câu 92: \_\_\_\_\_ led to the modern robot.

- A. The advantage of the multi-jointed artificial arm, or manipulator
-  B. The growth of the multi-jointed artificial arm, or manipulator
- C. The finish of the multi-jointed artificial arm, or manipulator,
- D. The opportunity of the multi-jointed artificial arm, or manipulator,

Câu 93: With some metals, such as \_\_\_\_\_, fatigue can be avoided by keeping the cyclic force below a certain level.

- A. aluminum alloys
- B. chromium alloys
- C. sodium alloys
-  D. titanium alloys

Câu 94: \_\_\_\_\_ is a process in which two or more pieces of metals are joined by the application of pressure .

- A. Soldering
-  B. Pressure welding
- C. Brazing
- D. Heat welding

Câu 95: \_\_\_\_\_ can be used to produce flat surfaces.

- A. milling machines and boring machines
- B. milling machines and hole making machines
- C. milling machines and drilling machines
-  D. milling machines and lathes

Câu 96: Compression is the decrease in volume that results from \_\_\_\_\_.

- A. the application of pressure



- B. the appliance of pressure
- C. the application of force
- D. . the application of external force

Câu 97: Who produces the drawings and designs documents from which the product is made?

A. draughts men and designs



- B. draughts men and designers
- C. Planning operators and designers
- D. Drawing and draughts men

Câu 98: In manufacturing and production, feedback loops require that \_\_\_\_\_ be measured and compared with the set of limits.

- A. the feedback loops
- B. the feedback systems



- C. the physical quantities
- D. the measuring quantities

Câu 99: \_\_\_\_\_ must know how solid materials respond to external forces, such as tension, compression, torsion, bending, and shear.

A. scientists



- B. mechanical engineers
- C. engineer
- D. engineering industry

Câu 100: \_\_\_\_\_ comprise glass- fibers made of ceramic materials embedded in a ceramic matrices.

A. polymer matrix composites



- B. ceramic matrix composites
- C. metallic matrix composites
- D. plastic matrix composite

Câu 101: \_\_\_\_\_ are generally required for high performance structural applications.

- A. synthetic fiber composites
- B. long fiber segment composites
- C. short fiber segment composites



D. thin continuous- fiber composites

Câu 102: Employees are sometimes called the \_\_\_\_\_

A. labor



- B. labor force
- C. producer
- D. worker

Câu 103: Plastic objects can be broken down and they can be burned.

A. protected by fire

B. damaged from fire

 C. endamaged by fire

D. endamaged from fire

Câu 104: The glass fibers have the brittle property when they are isolated .

A. alone

B. separate

C. lonely

 D. all are correct

Câu 105: \_\_\_\_\_ deals with developing components and equipments for communication, computing and etc.

 A. electronic engineering

B. electrical engineering

C. mechanical engineering

D. medical engineering

Câu 106: The planer is intended to produce \_\_\_\_\_.

A. vertical, longitudinal and diagonal cuts

B. horizontal and vertical cuts

C. diagonal, horizontal and conical cuts

 D. diagonal, vertical and horizontal cuts

Câu 107: Scientists and engineers have devised ways of fashioning thousands of tiny integrated circuits on a small silicon chip.

A. very small

 B. united

C. derived

D. separated

Câu 108: Automated manufacture arose out of the intimate relationship of such economic forces and technical innovations.

A. appearance

 B. improvement

C. intervention

D. operation

Câu 109: Engineering is about \_\_\_\_\_.

A. putting ideas in engineering

B. putting action into ideas

C. linking ideas with action

D. putting ideas into action



Câu 110: Composites can also have other attractive properties, such as high \_\_\_\_\_ .

- A. thermal or electrical superconductivity
- B. thermal or electrical coefficient



C. thermal or electrical conductivity

D. thermal or electrical coefficient of expansion

Câu 111: In an integrated system of production, there may be many \_\_\_\_\_ machines to move things from one place to another.

A. automatic



B. transfer

C. automated

D. tool

Câu 112: Small chip enables us to miniaturize electronic components.

- A. make small
- B. make models of
- C. make larger



D. make smaller

Câu 113: \_\_\_\_\_ gave rise to the factory system of production.

A. The development of power



B. The development of power technology

C. The development of automation technology

D. The development of mechanization technology

Câu 114: A composite material can provide \_\_\_\_\_.

- A. superior and unique mechanical properties
- B. superior and unique physical properties
- C. superior and unique engineering properties



D. superior and unique physical and mechanical properties

Câu 115: When using CAD and CAM systems, a designer draws a part and indicates its \_\_\_\_\_ with the aid of a special light pen on a television like cathode-ray tube computer display screen

- A. sizes
- B. lines



C. dimensions

D. components

Câu 116: Micrometers and vernier gauges are \_\_\_\_\_.

- A. . measuring instruments
- B. non- precision measuring instruments

-  C. precision measuring instruments
- D. precision instruments

Câu 117: \_\_\_\_\_ can be used to improve the properties of metals.

- A. Methods of extracting
- B. Methods of heat treating
- C. Methods of alloying
-  D. Methods of treating, extracting and alloying

Câu 118: The process in which the joint is obtained by the application of rivets is called \_\_\_\_\_.

- A. brazing
-  B. riveting
- C. bolting
- D. soldering

Câu 119: Products of communication, computing and so on result from \_\_\_\_\_.

- A. Electronic engineers
-  B. mechanical engineers
- C. electrical engineers
- D. medical engineers

Câu 120: The force in a cable holding a weight is a good example of \_\_\_\_\_.

- A. compression
- B. torsion
- C. tensile strength
-  D. tension

Câu 121: \_\_\_\_\_ was the original pressure welding .

- A. Thermite welding
- B. Furnace welding
-  C. Forge welding
- D. Force welding

Câu 122: When a rod is bent, for example, one side of it is stretched and the other side is \_\_\_\_\_.

- A. subjected to a compression
-  B. subjected to a compression force
- C. resist to compressive force
- D. sustain a compressive force

Câu 123: Metal objects can be broken down and metals recycled.

-  A. reshaped
- B. reshape

- C. shape
- D. shaped

Câu 124: The term “automation” has also been used to describe non-manufacturing systems in which programmed or automatic devices can operate independently of human control.

- A. in the term of automation
- B. in the manufacturing systems
- C. in the non- manufacturing process



- D. in the non- manufacturing systems

Câu 125: PMCs is the short form of \_\_\_\_\_.



- A. Polymer matrix composites
- B. Plastic matrix composite
- C. Polymer matrix composite
- D. polyme matrix composites

Câu 126: The main advantage qualities of metals are \_\_\_\_\_.

- A. strength and toughness
- B. strength and high thermal resistance



- C. strong and tough
- D. strong and high resistant

Câu 127: The joints of a robotic arm are usually driven by \_\_\_\_\_.

- A. engines



- B. motors
- C. batteries
- D. cylindrical parts

Câu 128: PMCS and other composites tend to be anisotropic.



- A. changing properties in different ways.
- B. extremely strong
- C. changing characteristic in the same ways
- D. stiff enough

Câu 129: Which materials can be harder than wood or softer than rubber?

- A. metallic materials



- B. plastic materials
- C. thermoplastics
- D. plastic articles

Câu 130: Alloys are \_\_\_\_\_.

- A. a mixture of metals
- B. mixtures of iron and other materials

C. a combination of metals

 D. mixtures of metals

Câu 131: Materials subjected to high temperatures are especially susceptible to \_\_\_\_\_.

 A. creep

B. compression

C. fatigue

D. tension

Câu 132: A generator is a machine for changing \_\_\_\_\_ energy into \_\_\_\_\_ energy.

A. electrical / mechanical

 B. mechanical / electrical

C. thermal / electrical

D. chemical / thermal

Câu 133: The main factor to increase the life of metallic materials is \_\_\_\_\_.

A. corrosion

 B. corrosion resistance

C. corrosion resistant

D. resist corrosion

Câu 134: Many manufacturing processes are \_\_\_\_\_. They can work with little or no human intervention.

A. automation

B. automated

 C. automatic

D. automotive

Câu 135: The basic multi-jointed concept of the PUMA is the template for most contemporary robots.

 A. modern

B. automatic

C. original

D. primitive

Câu 136: Finished parts are easily damaged by \_\_\_\_\_.

A. chemical action and corrosion

B. corrosion and abrasion

C. corrosion and compression

 D. chemical action and mechanical damage

Câu 137: When a material is subjected to a bending, shearing, or torsional force, \_\_\_\_\_ are simultaneously at work.

A. both tensile and compressive strengths



- B. both tension and compression
- C. both tensile and compressive
- D. both elastic and permanent deformations

Câu 138: \_\_\_\_\_ are being used to transfer, manipulate, and index both light and heavy workpiece.



- A. Industrial robots
- B. Automation technology
- C. Computer technology
- D. Transfer machines

Câu 139: A thermostat uses a feedback loop\_\_\_\_\_.

- A. to control a desired room temperature
- B. to control a actual room temperature



- C. to control a room temperature
- D. to control a furnace

Câu 140: Time-dependent effects of external forces are \_\_\_\_\_.



- A. creep and fatigue
- B. Creep and fracture
- C. elastic deformation
- D. permanent deformation

Câu 141: Pure iron is a \_\_\_\_\_.

- A. hard metal



- B. soft metal
- C. softly metal
- D. strong metal

Câu 142: A primitive arm was developed to be programmed to perform specific tasks.



- A. original
- B. simple
- C. single
- D. robotic

Câu 143: \_\_\_\_\_ is a process in which two or more pieces of metals are joined by heat , pressure ,or a combination of both.



- A. Welding
- B. Heat welding
- C. Pressure welding
- D. Joining metals

Câu 144: Scientists and engineers have devised ways of fashioning thousands of tiny integrated circuits on a small silicon chip.

- A. moderning
-  B. making up
- C. discovering
- D. finding

Câu 145: The system of manufacture designed to extend the capacity of machines to perform certain tasks formerly done by human and to control sequences of operation without human intervention.

- A. appearance
- B. help
- C. introduction
-  D. interference

Câu 146: \_\_\_\_\_ are the most versatile of all machine tools.

- A. drilling machines
- B. drilling and boring machines
-  C. milling machines
- D. grinders

Câu 147: A process that is used to make a drilled hole smooth and accurate is called \_\_\_\_\_.

- A. lapping
- B. honing
- C. grinding
-  D. all a, b, or c

Câu 148: \_\_\_\_\_ has three possible movements: longitudinal, vertical and horizontal.

- A. the cutting edges of milling machine
-  B. the table of milling machine
- C. the tool of milling machine
- D. the workpiece of milling machine

Câu 149: Mechanical engineering is concerned with \_\_\_\_\_.

-  A. making tools and machines
- B. making roads and airports
- C. making equipments for communicating
- D. making electricity

Câu 150: \_\_\_\_\_ are means of automated manufacture.

- A. feedback systems and power tranfer
- B. transfer machines and power tranfer
- C. division of labor and mechanization
-  D. feedback systems and computers

Câu 151: A composite material combines the most desirable properties of its constituents.



- A. valuable
- B. modern
- C. pleasing
- D. interest

Câu 152: A cam converts \_\_\_\_\_ into the reciprocating motion required to operate the valves.



- A. the rotary movement of the crankshaft
- B. the rotary movement of the engine
- C. the linear movement of the engine
- D. the oscillating movement of the engine

Câu 153: In manufacturing, \_\_\_\_\_ results in increased production and a reduction in the level of skills required of workers.



- A. the labor of division in automation
- B. the mechanization in automation
- C. the power transfer in automation
- D. the feedback in automation

Câu 154: \_\_\_\_\_ is carried out to make metals softer and less brittle.



- A. Hardening
- B. Tempering
- C. Heating
- D. Annealing

Câu 155: The main factor to reduce the life of metallic materials is \_\_\_\_\_.



- A. corrosion resistance
- B. corrode
- C. corrosion
- D. resistance to chemical action

Câu 156: Plastic objects can be broken down and they can be burned.



- A. dumped by fire
- B. endamaged by fire
- C. damage
- D. fire

Câu 157: Who builds ,creates and introduces new components or products and materials to make the products cheaper, stronger?



- A. Design engineers
- B. Design engineering
- C. Production engineers
- D. Production planning engineers

Câu 158: In the thermite welding process, \_\_\_\_\_ serves as a filler metal for the weld.

- A. the thermite
-  B. the liquid steel
- C. the aluminium powder
- D. the welding rod

Câu 159: The main advantage of metals is their strength and toughness.

- A. hardness to break and to cut
- B. hardless property to break
- C. strong property to cut and to break
-  D. strong and hard properties to break and cut

Câu 160: The fibrous reinforcing \_\_\_\_\_ may consist of thin continuous fiber or short fiber segments.

- A. constituent of materials
- B. constituent of glass fiber
-  C. element of composites
- D. element of materials

Câu 161: \_\_\_\_\_ compares the desired room temperature against the actual room temperature, then sends the appropriate instructions to the furnace.

-  A. The thermostat
- B. The feedback
- C. The furnace
- D. None is correct.

Câu 162: Composite material is a material that is made up of \_\_\_\_\_.

- A. a combination of two or more metals
-  B. a combination of two different materials
- C. a mixture of two or more different metals
- D. a coordination of two or more different materials

Câu 163: In the 1920s, the auto industry combined these concepts into an integrated system of production to make automobiles.

- A. The automated industry
- B. The automation industry
- C. The automatic industry
-  D. The automobile industry

Câu 164: The inspiration for the design of a robot manipulator is the human arm, but with some \_\_\_\_\_.

-  A. differences
- B. similarities
- C. purposes

D. products

Câu 165: \_\_\_\_\_ is used in over seventy percent of Concorde's structure.



- A. Aluminium alloy
- B. Chromium alloy
- C. Titanium alloy
- D. High- strength steel

Câu 166: \_\_\_\_\_ can extend by sliding cylindrical sections one over another to lengthen the arm.



- A. a robot arm
- B. a robot section
- C. an industrial robot
- D. a robot joint

Câu 167: The introduction of microprocessors and computer has made possible the \_\_\_\_\_.



- A. development of CAD and CAM technology
- B. development of automation
- C. increase production
- D. introduction of feedback loop

Câu 168: Solid materials respond to these forces by \_\_\_\_\_.



- A. elastic deformation, permanent deformation, or fracture
- B. elastic deformation, fracture deformation
- C. elastic deformation, permanent deformation
- D. tension, compression, and fatigue

Câu 169: A machine that is used to make a drilled hole greater is called the \_\_\_\_\_.



- A. boring process tool
- B. boring machine
- C. borer machine tool
- D. boring machines

Câu 170: \_\_\_\_\_ can be further improved by the use of heat treatment.



- A. The properties of materials
- B. Properties of metallic materials
- C. Properties of metals
- D. The property of metals

Câu 171: The tool of a lathe may be moved parallel to or across \_\_\_\_\_ to form parts.

- A. the direction of the workpiece
- B. the direction of the material
- C. the direction of the tool

 D. the direction of rotation of the workpiece

Câu 172: A glass-fiber reinforced plastic \_\_\_\_\_ the high strength of thin glass fibers with the ductility and chemical resistance of plastic.

A. consists

 B. co-ordinates

C. composes

D. comprise

Câu 173: Elasticity is a major \_\_\_\_\_ of rubber.

A. quantity

B. element

C. proper

 D. quality

Câu 174: \_\_\_\_\_ can be added to steel to develop hardness.

A. copper

 B. tungsten

C. aluminium

D. chromium

Câu 175: Composites can also have other attractive properties.

A. good things

 B. advantage properties

C. better properties

D. interested properties

Câu 176: In the arc welding process, \_\_\_\_\_ produces enough heat to melt metal and create the weld.

A. the flame

 B. the electric arc

C. the pressure

D. the direct or alternating current

Câu 177: Some multi-jointed robotic arms are composed of servo, or feedback, controllers\_\_\_\_\_.

A. receive input from a computer.

B. that receive output from a computer

C. receive input from a robot.

 D. that get input from a computer.

Câu 178: Thermite is \_\_\_\_\_.

A. the results of the chemical reaction of the aluminium and oxygen

B. the results of the chemical reaction of aluminium powder and liquid steel

-  C. the results of the chemical reaction when aluminium powder is mixed iron oxide
- D. the results of the chemical reaction

Câu 179: Machining centers are \_\_\_\_\_.

- A. machine tools that can perform several similar machining operations.
-  B. machine tools that can perform several different machining operations
- C. places that can perform several similar machining operations
- D. places that can perform several different machining operations

Câu 180: The brittleness is a characteristic of \_\_\_\_\_.

- A. the composite
-  B. the glass fibers
- C. the metals
- D. the plastics

Câu 181: Engineers have to know the \_\_\_\_\_ of these materials when they use.

- A. applications
- B. types
- C. properties
-  D. both a and c

Câu 182: The kind of composite that glass- fibers made of ceramic materials is embedded in a plastic matrix is termed \_\_\_\_\_.

- A. plastic matrix composite
-  B. polymer matrix composites
- C. metallic matrix composites
- D. ceramic matrix composites

Câu 183: Material Science is the study of \_\_\_\_\_.

- A. materials such as, metallic materials
- B. metallic materials as well as ceramic materials
- C. non-metallic materials as well as silicon
-  D. materials including metals and non-metals

Câu 184: \_\_\_\_\_ allow us to do every simple things like switch on the lights, turn taps.

- A. mechanics
-  B. mechanisms
- C. machines
- D. machinery

Câu 185: A composite material combines the most \_\_\_\_\_ properties of its constituents.

-  A. valuable

- B. interest
- C. modern
- D. pleasing

Câu 186: The specific strength of continuous carbon fiber PMCS, for example, can be vastly superior to conventional metal alloys.

A. length to diameter ratio



- B. strength to density ratio
- C. elastic modulus to density ratio
- D. strength to modulus ratio

Câu 187: \_\_\_\_\_ consist of synthetic fibers embedded within a matrix.



- A. composite materials
- B. glass-fibers
- C. glass-fiber reinforced plastics
- D. polymer matrix composites

Câu 188: \_\_\_\_\_ are the stages of heat treatment

A. tempering and heating



- B. heating and cooling metals
- C. annealing and tempering metals
- D. hardening, annealing and tempering

Câu 189: A feedback loop takes whatever pre-programmed action is necessary\_\_\_\_\_.

A. to maintain the measure quantity within the limits of the acceptable standard



- B. to maintain the measured physical characteristic within the limits of the acceptable standard
- C. to maintain the measured physical quality within the limits of the acceptable standard
- D. to maintain the measured qualities within the limits of the acceptable standard

Câu 190: In the arc welding process, \_\_\_\_\_ is used to create an electric arc.

A. the resistance of metals



- B. the electric current
- C. the flame
- D. the heat and pressure of a furnace

Câu 191: Scientists and engineers have devised ways of fashioning thousands of tiny integrated circuits on a small silicon chip.



- A. invented
- B. developed
- C. composed of
- D. understood

Câu 192: A glass fiber reinforced plastic combines the high strength of thin glass fiber with the ductility chemical resistance of plastic.

- A. reshaped
- B. recycled
-  C. strengthened
- D. compressed

Câu 193: \_\_\_\_\_ are mixtures of iron and carbon.

- A. steels
- B. cast iron
- C. wrought iron
-  D. all are correct

Câu 194: Victor Scheinman in California developed a truly flexible multipurpose manipulator known as the Programmable Universal Manipulation Arm.

- A. different
- B. possible
-  C. changeable
- D. difficult

Câu 195: \_\_\_\_\_ is a system of manufacture designed to extend the capacity of machines to perform certain tasks formerly done by human.

-  A. Automation
- B. Automatic
- C. Automobile
- D. Automotive

Câu 196: The simplification of work made possible by the division of labor in the automation also made it possible to design and build machines \_\_\_\_\_.

-  A. that duplicated the motions of the worker
- B. that replace the motions of the workers
- C. that decreased the motions of the worker
- D. that duplicated the motions of the work

Câu 197: A process that is used to make a drilled hole smooth and accurate is called the \_\_\_\_\_.

- A. boring
-  B. honing
- C. tapping
- D. turning

Câu 198: Automated manufacture arose out of the intimate relationship of such economic forces and technical innovations.

-  A. close
- B. separate
- C. next to
- D. nearly

Câu 199: The material returns to its original size and form when the external force is lifted is known as \_\_\_\_\_.

- A. deformation
- B. permanent deformation
-  C. elastic deformation
- D. Time-dependent deformation

Câu 200: \_\_\_\_\_ are used in the engine surrounds of Concorde to resist temperatures of 4000 degrees centigrade.

-  A. Titanium alloys
- B. Chromium alloys
- C. Aluminium alloys
- D. High- strength steels

Câu 201: Mechanisms provide \_\_\_\_\_ to press sheets of steel into car body panels.

-  A. the forces
- B. the pressure
- C. the temperature
- D. the strength

Câu 202: What are the most valuable properties of plastics?

- A. Lightness and corrosion resistant
- B. Lightless and corrosion resistance
-  C. Lightness and corrosion resistance
- D. Lightless and corrosion resistant

Câu 203: In manufacturing and production, feedback loops require that \_\_\_\_\_ be capable of correcting the process so that the measured items comply with the standard.

- A. the feedback loop
-  B. the feedback system
- C. the measuring quantity
- D. the physical quantity

Câu 204: \_\_\_\_\_ also must process sensor information collected from cameras.

-  A. Controllers and associated computers
- B. Feedback loop and associated computers
- C. Controllers and separated computers
- D. Controllers and feedback loop

Câu 205: Bronze is an alloy of \_\_\_\_\_.

- A. copper and tin
- B. copper and zinc
-  C. copper, tin and zinc
- D. copper, lead and tin

Câu 206: CMCs is the short form of \_\_\_\_\_.

- A. ceramic metal composite
-  B. ceramic matrix composites
- C. Composite matrix ceramics
- D. Ceramic matrix composite

Câu 207: \_\_\_\_\_ consist of glass- fibers made of ceramic materials embedded in a metal matrices.

-  A. metallic matrix composites
- B. polymer matrix composites
- C. ceramic matrix composites
- D. plastic matrix composite

Câu 208: \_\_\_\_\_ of plastic is one of the most desirable properties.

-  A. the lightness
- B. the lightless
- C. the resistance
- D. the chemical reaction

Câu 209: The division of labor, power transfer and the mechanization of the factory, and the development of transfer machines and feedback systems are examples of \_\_\_\_\_.

-  A. Automation elements
- B. Automatic elements
- C. Automated elements
- D. Automotive elements

Câu 210: Soldering is recommended for \_\_\_\_\_.

-  A. permanent small and weak joints
- B. permanent thin sheet-metal joints
- C. permanent strong and midium sized joints
- D. temporary small and weak joints

Câu 211: \_\_\_\_\_ are used by engineers where heat-resistant materials are needed.

- A. plastics
- B. metals
- C. glasses
-  D. ceramics

Câu 212: \_\_\_\_\_ have promoted the development of numerically controlled machines and machining centers

- A. Computers and modern technology
- B. feedback loops
-  C. Computers and feedback loops

D. Feedback loop and transfer power

Câu 213: Composites can also have other attractive properties, such as a low \_\_\_\_\_ .

A. coefficient of expansion

B. coefficient of thermal or electrical

 C. thermal expansion coefficient

D. thermal or electrical expansion

Câu 214: Cast iron should be used for components such as machine frames \_\_\_\_\_.

A. which must be strong in tension

 B. which must be strong in compression.

C. which must be strong in shear.

D. which must be strong in torsion.

Câu 215: The most broadly used type of composite material is \_\_\_\_\_.

 A. polymer matrix composites

B. glass-fiber composites

C. ceramic matrix composites

D. metal matrix composites

Câu 216: People are interested in \_\_\_\_\_ composites.

A. popular

 B. highly developed

C. common

D. expensive

Câu 217: Ferrous and non ferrous are the two types of \_\_\_\_\_.

A. substances

B. steels

 C. metals

D. materials

Câu 218: \_\_\_\_\_ was first discussed by the British economist Adam Smith.

 A. the labor of division in automation

B. the mechanization in automation

C. the power transfer in automation

D. the feedback in automation

Câu 219: The system of manufacture designed to extend the capacity of machines to perform certain tasks formerly done by human and to control sequences of operation without human intervention.

A. independently human control

 B. independently of human control

C. dependently human control

D. dependent on human control

Câu 220: \_\_\_\_\_ have been used to replace \_\_\_\_\_ in a number of applications when materials science is improved.

A. non ferrous metals / ferrous metals



B. non-metals / metals

C. metallic materials / metals

D. silicon materials / ceramic materials

Câu 221: Having discovered that nonmetallic materials could be made \_\_\_\_\_ in ways that metals could not.

A. electronic components



B. to conduct electricity

C. for electrical equipments

D. to thermal or electrical conductors

Câu 222: Some multi-jointed robot arms \_\_\_\_\_ with servo, or feedback, controllers.



A. are equipped

B. are composed

C. are consisted

D. are involved

Câu 223: People are interested in advanced composites.

A. popular



B. highly developed

C. expensive

D. common

Câu 224: \_\_\_\_\_ can be defined as progressive fracture.

A. creep

B. compression



C. fatigue

D. tension

Câu 225: \_\_\_\_\_ deals with hospital machinery of all kinds.



A. medical engineering

B. electrical engineer

C. mechanical engineer

D. mechanical and electrical engineering

Câu 226: Chromium makes steel \_\_\_\_\_.

A. more resistant to wear

B. harder

-  C. more corrosion resistant
- D. stronger

Câu 227: Paper trimmers have \_\_\_\_\_.

- A. oscilating movement
-  B. linear movement
- C. rotary movement
- D. reciprocating movement

Câu 228: Who produces the manufacturing instructions and organizes the work of production?

- A. Production and planning engineers
-  B. Production planning and control technicians
- C. Installation and service technicians
- D. Planning and control engineers

Câu 229: When a material is subjected to a bending, shearing, or torsional force, both tensile and compressive forces are simultaneously at work.

- A. the same time
-  B. at the same time
- C. therefore
- D. frequently

Câu 230: The piston in an engine has \_\_\_\_\_.

-  A. reciprocating motion
- B. oscilating motion
- C. linear motion
- D. rotary motion

Câu 231: The process of cleaning and separating mineral oil is termed \_\_\_\_\_.

- A. extracting
-  B. refining
- C. refinery
- D. refined

Câu 232: Heat treatment is a process used to \_\_\_\_\_.

-  A. improve the properties of metals
- B. improve the uses of materials
- C. improve the uses of metal
- D. improve the properties of materials

Câu 233: The division of labor is \_\_\_\_\_.

- A. the introduction of a manufacturing or service stage into its smallest independent steps.

- B. the reduction of a manufacturing or service into its smallest independent steps.
-  C. the reduction of a manufacturing or service process into its smallest independent steps
- D. the introduction of a manufacturing or service process into its smallest independent steps.

Câu 234: Machines can start, stop, speed up, slow down, count, inspect, test, compare, and measure through \_\_\_\_\_.

- A. feedback automation
- B. feedback loop
-  C. feedback devices
- D. automation

Câu 235: \_\_\_\_\_ is a mechanical, pneumatic, or electronic device that senses or measures a physical quantity.

-  A. A feedback loop
- B. A feedback principle
- C. A automated thermostat
- D. A CAD and CAM technology

Câu 236: If You put \_\_\_\_\_ near a fire, they will melt or soften.

- A. plastic products
-  B. thermoplastic products
- C. thermosetting plastics
- D. lead alloy products

Câu 237: Who tests samples of materials and of the products?

-  A. Laboratory technicians
- B. Inspection technicians
- C. Service technicians
- D. Text technicians

Câu 238: The process of cleaning and separating mineral oil is done in big factories. The factories are known as \_\_\_\_\_.

- A. extracting factories
- B. refining factory
-  C. refineries
- D. refined factories

Câu 239: Engineers must know how \_\_\_\_\_ respond to external forces, such as tension, compression, torsion, bending, and shear.

- A. solid metals
-  B. solid materials
- C. solid substances
- D. solid composites

Câu 240: Under tension, a material usually stretches, returning to its original length \_\_\_\_\_.

-  A. if the force does not exceed the material's elastic limit
- B. because the force does not exceed the material's elastic limit
- C. because the force exceed the material's elastic limit
- D. if the force exceed the material's elastic limit

Câu 241: Plastics can be \_\_\_\_\_ like metals.

- A. machined
- B. shaped
- C. employed
-  D. all a, b ,c

Câu 242: A bar of Chromium steel has \_\_\_\_\_.

- A. resist corrosion
-  B. corrosion resistance
- C. corrosion resistant
- D. resists corrosion

Câu 243: What can be used to turn \_\_\_\_\_ into plastics of all kinds?

- A. oil and wood
- B. mineral oil is found under the ground
-  C. remained material after the oil has been refined.
- D. Remained oil after the oil has been cleaned and separated.

Câu 244: Another problem with plastics is what to do with them after use.

-  A. plastics
- B. problems
- C. problems with plastics
- D. another problem

Câu 245: A machine used to make a \_\_\_\_\_ hole where none formerly existed is called the \_\_\_\_\_.

- A. drilling
- B. drilling tool
-  C. drilling machine tool
- D. drilling machines

Câu 246: \_\_\_\_\_ is concerned with the production and distribution of electricity to home, offices and industry.

- A. electrical engineer
- B. mechanical engineer
-  C. electrical engineering
- D. mechanical engineering

Câu 247: Solid materials respond to these forces by elastic deformation, permanent deformation, or fracture.

A. replied



B. resist

C. answer

D. subject

Câu 248: Copper, silver and other metals are \_\_\_\_\_. They can be made into other shapes by hammering.

A. ductile



B. malleable

C. corrosion resistant

D. soft

Câu 249: Which group of materials is very useful for radios and many kinds of electrical products, such as plugs and sockets?

A. plastics

B. thermoplastics



C. thermosetting plastics

D. copper and lead

Câu 250: A feedback loop senses or measures \_\_\_\_\_ such as position, temperature, size, or speed.

A. an automated quantity



B. a physical quantity

C. a physical quality

D. a mechanical quality

Câu 251: \_\_\_\_\_ also can be constructed so that they bend like an elephant trunk.

A. robots



B. robot arms

C. robot sections

D. robot elements

Câu 252: These anisotropic properties pose a significant challenge for the designer who uses composite materials in structures that place multidirectional forces on the structure members.

A. are good things



B. are problems.

C. are specific properties

D. are interesting

Câu 253: The specific stiffness of continuous carbon fiber of PMCS can be vastly superior to conventional metal alloys.

A. length to diameter ratio

B. elastic to diameter ratio

C. length to density ratio



D. elastic modulus to density ratio

Câu 254: Ferrous metals are usually alloyed with carbon because \_\_\_\_\_.



- A. carbon increases the strength of iron.
- B. carbon decreases the strength of iron.
- C. carbon decreases the property of iron.
- D. carbon increases the properties of iron.

Câu 255: The system of manufacture designed to extend the capacity of machines to perform certain tasks formerly done by human and to control sequences of operation without human intervention is known as \_\_\_\_\_.



- A. automatic device
- B. automated device
- C. automatic technology
- D. auto industry

Câu 256: Mechanisms \_\_\_\_\_ an important role in engineering industry.



- A. produce
- B. make
- C. play
- D. form

Câu 257: \_\_\_\_\_ produces extremely smooth and exact finishes.



- A. the grinding process
- B. the boring process
- C. the process of turning
- D. the reaming process

Câu 258: \_\_\_\_\_ usually consists of heating the metal or alloy to a selected temperature below its melting point and then cooling it at a certain rate to obtain required properties.



- A. annealing process
- B. tempering process
- C. heating process
- D. heat treatment

Câu 259: \_\_\_\_\_ regulate the grasping force subjected on objects.



- A. Sensors on robots
- B. Sensors on grippers
- C. Controllers on robots
- D. Grippers on sensors

Câu 260: There are many materials to use, especially plastics, which are available.



- A. metals
- B. plastics
- C. materials

D. none is suitable

Câu 261: Engineers have to know the \_\_\_\_\_ of these materials when they use.

A. properties and types

B. applications and kinds

C. types and costs



D. qualities and applications

Câu 262: \_\_\_\_\_ must touch sensors on grippers that regulate the grasping force.



A. controllers and associated computers

B. cameras

C. objects

D. processes

Câu 263: In most robots, the \_\_\_\_\_ is moved from one position to another, changing its orientation.

A. grippers

B. robot hands

C. end effectors



D. gripper

Câu 264: In a milling machine, \_\_\_\_\_ is fed against its circular device with a series of cutting edges.

A. a cutting tool



B. a workpiece

C. a work table

D. a tool

Câu 265: This is a \_\_\_\_\_ drill. It works on the principle of compressed air.



A. pneumatic

B. automation

C. automatic

D. compressive

Câu 266: Aluminum bronze is an example of \_\_\_\_\_.



A. aluminum and copper

B. aluminum and copper alloys

C. aluminum, tin and copper alloys

D. aluminum, zinc and copper alloys

Câu 267: The basic types of motion in mechanisms are \_\_\_\_\_.



A. rotary , linear, oscilating and reciprocating

B. linear, rotary and oscilating

C. linear, oscilating and reciprocating

D. rotary , linear, pendulum and reciprocating

Câu 268: Thermite welding can be used in the welding of \_\_\_\_\_.



- A. rail for railroad tracks
- B. automotive industry
- C. automotive and aerospace industries
- D. aerospace industry

Câu 269: Bronze and brass are \_\_\_\_\_.



- A. copper alloys
- B. lead alloys
- C. aluminium alloys
- D. nickel alloys

Câu 270: \_\_\_\_\_ deals with mines and mining equipments.



- A. mechanical engineers
- B. mining engineering
- C. mechanical and electrical engineering
- D. mechanical engineering

Câu 271: High electrical resistance is the most important \_\_\_\_\_ of tungsten



- A. property
- B. quanlity
- C. material
- D. quantity

Câu 272: When a material is subjected to a bending, shearing, or twisting force, both tensile and compressive forces are simultaneously at work.



- A. is sustained
- B. is resisted
- C. is accepted
- D. is stood

Câu 273: Steel has a smaller \_\_\_\_\_ than cast iron.



- A. carbon content
- B. carbon
- C. iron
- D. iron content

Câu 274: The process in which the joint is obtained by the application of heat is termed\_\_\_\_\_.

- A. brazing
- B. Soldering
- C. heat welding



D. Pressure welding

Câu 275: \_\_\_\_\_ contain lead and tin.

A. Bronze and solder



B. Pewter and solder

C. Solder and bronze

D. Brass and solder

Câu 276: \_\_\_\_\_ occurs when a mechanical part is subjected to a repeated or cyclic stress, such as vibration.

A. creep

B. compression



C. fatigue

D. tension

Câu 277: \_\_\_\_\_ is very necessary to all automatic- control mechanism.

A. the transfer machine



B. the feedback principle

C. the power transfer

D. the CAD and CAM technology

Câu 278: \_\_\_\_\_ make material bodies shorter.

A. A tension force



B. Compression forces

C. A shear forces

D. Torsion forces

Câu 279: \_\_\_\_\_ design, and make the machines and the processing tools for harvesting, preparing and preserving the foods and drinks.



A. Mechanical engineers

B. Electronic engineers

C. Civil engineers

D. Electrical engineers

Câu 280: \_\_\_\_\_ can be used to tighten two pieces of metals together.

A. Bolts



B. Bolts and screws

C. Screw threads

D. Welding

Câu 281: In manufacturing and production, \_\_\_\_\_ require that acceptable limits or tolerances be established for the process to be performed.



A. the feedback loops

- B. the feedback systems
- C. the measuring quantity
- D. the physical quantity

Câu 282: Aluminum bronze is much \_\_\_\_\_ than either pure aluminum or pure copper.

- A. weaker and less resistant to wear
-  B. stronger and more resistant to wear
- C. weaker and tougher
- D. strong and resistant

Câu 283: Engineers must know how solid materials respond to \_\_\_\_\_, such as tension, compression, torsion, bending, and shear.

- A. inside forces
-  B. outside forces
- C. internal forces
- D. gravity forces

Câu 284: Material Science is the study of \_\_\_\_\_.

- A. the properties of materials
- B. the applications of materials
- C. both the quantities and applications of materials
-  D. both the qualities and applications of materials

Câu 285: \_\_\_\_\_ are necessary for high performance structural applications.

- A. Metal matrix composites
- B. Continuous and short fiber composites
- C. Short-fiber composites
-  D. Continuous –fiber composites

Câu 286: Material science began when the rapid development of semiconductors for electronic industry \_\_\_\_\_.

- A. in the early 1960
-  B. in the early 1960s
- C. in the late 1980
- D. in the late 1980s

Câu 287: In manufacturing, the results of the division of labor in automated manufacture is increased \_\_\_\_\_.

-  A. production and a reduction in the level of skills required of workers.
- B. products and a reduction in the level of skills required of workers.
- C. production and a induction in the level of skills required of workers.
- D. production and a reduction in the level of skills required of people.

Câu 288: You can feel the vibration of an engine when touching it.

- A. shaking



- B. noise
- C. pollution
- D. procession

Câu 289: \_\_\_\_\_ was first used in 1921 by Karel Capek.



- A. the word “robot”
- B. the word “automation”
- C. the word “automated”
- D. the word “robota”

Câu 290: \_\_\_\_\_ holds and rotates workpiece while a cutting tool shapes the material.

- A. A shaper
- B. A planer



- C. A lathe
- D. A saw

Câu 291: \_\_\_\_\_ is a device used to move a workpiece from one specialized machine tool to another.

- A. the transfer power



- B. the transfer machine
- C. the transfer technology
- D. the power transfer

Câu 292: \_\_\_\_\_ are used to drill a hole, to change the size of a hole or to sharpen a hole.

- A. Drilling machines



- B. Hole- making machine tools
- C. Drilling and boring machines
- D. Hole- making machine

Câu 293: Once they have been taken from their moulds, they seldom melt or soften again under heat. They means \_\_\_\_\_.

- A. plastics
- B. thermoplastics
- C. polymer



- D. thermosetting plastics

Câu 294: \_\_\_\_\_ are only employed to make holes where none previously existed.



- A. Drilling machines
- B. Drilling and boring machines
- C. Hole –making machines
- D. Hole-making machine tools

Câu 295: Metallic elements are added to steel \_\_\_\_\_.

- A. to improve metal properties
- B. to improve the properties
-  C. to improve steel properties
- D. to improve their properties

Câu 296: \_\_\_\_\_ can be completely corrosion resistant.

- A. stainless steels
- B. copper alloys
- C. Chromium alloys
-  D. No materials

Câu 297: Polymer matrix composites include fibers made of a \_\_\_\_\_ such as carbon or glass mounted into a plastic matrix.

- A. polymer material
- B. metallic material
- C. plastic material
-  D. ceramic material

Câu 298: \_\_\_\_\_ facilitates the production process.

- A. CAD and CAM
- B. CAD and CAM technology
-  C. CAM Technology
- D. CAD Technology

Câu 299: In \_\_\_\_\_, heat is achieved from the resistance of metal to the flow of an electric current.

- A. Thermite welding
- B. Arc welding
-  C. Resistance welding
- D. Gas welding

Câu 300: The term “robot” originates from \_\_\_\_\_, meaning “compulsory labor”.

-  A. the Czech word robota
- B. the French word robota
- C. the Cech word robota
- D. the Czec word robota

Câu 301: What can Mineral oil be used to produce?

- A. plastics and many different commercial products for ships, trains and cars
- B. plastics and oil of all kinds
- C. plastics , oil for ships or trains and machine oil of all kinds
- D. plastics , fuel for forms of transport and machine oil of all types



Câu 302: Mechanical engineering consists of marine, automobile and \_\_\_\_\_.

- A. food processing
- B. building services
- C. electricity generating
- D. heating and ventilating



Câu 303: \_\_\_\_\_ is a nonpressure process using heat from a gas flame.



- A. Gas welding
- B. Arc welding
- C. Heat welding
- D. Thermite welding

Câu 304: \_\_\_\_\_ is a kind of welding most commonly used in the manufacture of electronic components and appliances.

- A. Bolting
- B. Riveting
- C. Brazing
- D. Soldering



Câu 305: \_\_\_\_\_ deals with building roads, bridges, airports ,stations, and etc.

- A. Mechanical engineering
- B. Mining engineering
- C. Civil engineering
- D. Medical engineering



Câu 306: Creep is a slowly progressing, permanent deformation that results from \_\_\_\_\_.



- A. a regular force acting on a material
- B. a steady force acting on a metal
- C. a gradual deformation acting on metals.
- D. a steady deformation acting on a material.

Câu 307: A primitive arm that could be programmed to perform specific tasks was developed by \_\_\_\_\_.

- A. the French inventor George Devol, Jr
- B. the African inventor George Devol, Jr
- C. the American economist George Devol, Jr
- D. the American inventor George Devol, Jr.



Câu 308: The word "robot" has been used since to refer to a machine that performs work to assist people or work that humans find difficult or undesirable.

- A. when
- B. because

-  C. from that time
- D. while

Câu 309: The newest developments in materials science have tended to concentrate in \_\_\_\_\_ of materials.

- A. mechanical properties
-  B. electrical properties
- C. electrical and mechanical properties
- D. chemical and physical properties

Câu 310: The deformation of components of machines and engines is an easily seen example of \_\_\_\_\_.

-  A. creep
- B. fatigue
- C. tension
- D. compression

Câu 311: Scientists are finding new ways of non-metals in some applications to replace for metals by \_\_\_\_\_.

- A. using technical laboratory and tool research
- B. using laboratory and tool researching
- C. using laboratory techniques and tools
-  D. using laboratory techniques and research tools

Câu 312: All workers and machines in automation have to be \_\_\_\_\_ near the power source.

- A. replaced
- B. locate
-  C. located
- D. replace

Câu 313: \_\_\_\_\_ will never melt and soften again under heat .

- A. Products of plastics
- B. thermosetting plastics
- C. thermoplastics
-  D. thermosetting plastic objects

Câu 314: Who works as a part of a team to check and ensure that incoming and outgoing components and products meet specifications?

- A. Test engineers
-  B. Inspection engineers
- C. check technicians
- D. Debug engineers

Câu 315: The broader use of advanced composites is inhibited by high manufacturing costs.

- A. pressed

- B. force
-  C. prevented
- D. fabricated

Câu 316: Oxy-acetylene welding and electric arc welding are \_\_\_\_\_.

- A. metal joining methods
-  B. metal welding methods
- C. metal electric welding methods
- D. metal heat welding methods

Câu 317: The division of labor is an example of elements of automation developed \_\_\_\_\_.

-  A. in the latter half of the 18<sup>th</sup> century
- B. in the early half of the 18<sup>th</sup> century
- C. in the latter half of the 16<sup>th</sup> century
- D. in the early half of the 16<sup>th</sup> century

Câu 318: It isn't easy to carry \_\_\_\_\_.

- A. plastic containers or goods
- B. material containers or goods
-  C. metal containers or goods
- D. composite containers or goods

Câu 319: Fibers with \_\_\_\_\_ are used when we use short fiber segments.

-  A. a high aspect ratio
- B. a strong aspect ratio
- C. a specific stiffness
- D. a specific strength

Câu 320: \_\_\_\_\_ is the removing procedure of metal by a rotating wheel of abrasive grain

-  A. grinding
- B. grinder
- C. milling
- D. miller

Câu 321: The kind of corrosion taking place when two different metals touch each other in the damp conditions is known as \_\_\_\_\_.

- A. electrical corrosion
- B. electronic corrosion
-  C. electrolytic corrosion
- D. chemical corrosion

Câu 322: When using short fiber segments, fibers with a high aspect ratio are used.

- A. strength to density ratio



- B. length to diameter ratio
- C. length to density ratio
- D. elastic modulus to density ratio

Câu 323: The development of power technology developed \_\_\_\_\_.



- A. the factory system of production
- B. the factory of production
- C. the factory production of system
- D. the factory system of products

Câu 324: Feedback control, the development of specialized tools, and the division of work into smaller tasks were necessary \_\_\_\_\_.

- A. compositions in the automation of factories in the 18<sup>th</sup> century
- B. elements in the automation of factories in the 18<sup>th</sup> century.
- C. constituents in the automation of factories in the 18<sup>th</sup> century.



- D. all are correct.

Câu 325: \_\_\_\_\_ are softer than \_\_\_\_\_.



- A. thermoplastics / thermosetting plastics
- B. plastic objects / rubber objects
- C. rubber objects / plastic objects
- D. thermosetting plastics / thermoplastics

Câu 326: The material doesn't return to its original size and form when the external force is lifted is termed \_\_\_\_\_

- A. deformation
- B. permanent deformation
- C. elastic deformation
- D. Time-dependent deformation



Câu 327: In many cases, the slow deformation stops because the force causing the creep \_\_\_\_\_ by the deformation itself.



- A. is excluded
- B. is included
- C. is consisted
- D. is composed

Câu 328: Cars are now produced on \_\_\_\_\_.

- A. production assemble
- B. assembly lines
- C. automatic system
- D. automatic production



Câu 329: Plain carbon steel has a greater carbon than carbon content than \_\_\_\_\_.

- A. cast iron
-  B. wrought iron
- C. mild steels
- D. carbon steels

Câu 330: Ceramics are used where \_\_\_\_\_ are needed.

-  A. heat-resistant materials
- B. high heat- resistant metals
- C. high heat- resistant materials
- D. heat-resistant metals

Câu 331: \_\_\_\_\_ are designed to copy the function and structure of the human hand.

- A. grippers
- B. robot hands
- C. end effectors

-  D. all are right

Câu 332: Depending on how the fibers are \_\_\_\_\_ within the matrix, composites can be \_\_\_\_\_ to get structural properties specifically tailored for a particular structural use.

- A. intermixed / used
- B. intermixed / fabricating
-  C. interwoven / produced
- D. interwoven / used

Câu 333: Pure aluminium is \_\_\_\_\_ than the alloy that are made by mixing copper and aluminium.

- A. harder
- B. softer
- C. stronger

-  D. weaker

Câu 334: As improved manufacturing techniques are developed, it will become possible to produce composite materials at higher volumes and at a lower cost than is now possible, accelerating the wider exploitation of these materials. It means \_\_\_\_\_.

-  A. The development of manufacturing technology
- B. The development of manufacturing
- C. As improved manufacturing techniques
- D. The manufacturing technology

Câu 335: A glass-fiber reinforced plastic combines the high strength of thin glass fibers with \_\_\_\_\_ of plastic

- A. the ductile and chemical property
- B. the ductile and corrosion resistance
- C. the ductility and chemical resistant

 D. the ductile and corrosion resistant properties

Câu 336: In many cases the slow deformation stops because the force causing the creep is eliminated by the deformation itself.

 A. removed

B. expanded

C. included

D. made

Câu 337: Fabricating composite materials is a labor- intensive process.

A. a difficulty

B. a difficult problem

 C. a difficult procedure

D. a difficult

Câu 338: That the property of nonmetals, especially silicon, has discovered in the early 1960s is the \_\_\_\_\_.

A. superconductivity

 B. thermal and electrical conductivity

C. thermal or electrical superconductivity

D. electrical conductor

Câu 339: In 1975, Victor Scheinman developed a manipulator to do everything known as the PUMA.

A. Programmable Universal Multipurpose Arm

B. Programmable University Manipulation Arm

 C. Programmable Universal Manipulation Arm

D. Progress Universal Manipulation Arm

Câu 340: \_\_\_\_\_ moves the workpiece past a fixed tool.

A. a lathe

 B. a planer

C. a milling machine

D. a shaper

Câu 341: Grippers, or end effectors of robot, are designed to mimic \_\_\_\_\_.

A. the function and structure of human.

B. the function and structure of robot.

 C. the function and structure of the human hand.

D. the function and structure of the robot hand.

Câu 342: Pure copper is \_\_\_\_\_ than its alloys.

 A. weaker and lower electrical resistant

B. weaker and higher thermal resistant

- C. less chemical resistant and weaker
- D. higher thermal resistant and stronger

Câu 343: In many cases, the slow deformation stops because \_\_\_\_\_ causing the creep is eliminated by the deformation itself.

- A. the property
- B. the internal force
-  C. the external force

- D. the reason

Câu 344: You can feel the vibration of an engine when touching it

-  A. shaking
- B. noise
- C. pollution
- D. moving

Câu 345: \_\_\_\_\_ produce heat and release liquid metal in the thermite process.

- A. Aluminium and oxygen
-  B. Uniting aluminium powder with oxygen
- C. Aluminium powder
- D. None is correct

Câu 346: Stainless steels will also \_\_\_\_\_.

- A. corroded
- B. resists corrosion
-  C. corrode
- D. corrosion resistance

Câu 347: The inspiration to have a sketch of a manipulator is the human arm.

- A. model
- B. basic ideal
-  C. basic idea
- D. component

Câu 348: A process that makes a hole where none formerly existed is called \_\_\_\_\_.

- A. boring
- B. drilling and boring
-  C. drilling
- D. turning

Câu 349: Mining and medical engineering dealt with \_\_\_\_\_.

- A. mechanical engineering
- B. electrical engineering

C. civil engineering

 D. both a and b

Câu 350: There are two kinds of engineering material : \_\_\_\_\_.

A. ferrous metals and non-ferrous metals

B. ceramics and metals

C. metals and plastics

 D. metals and non-metals

Câu 351: A process that makes a drilled hole greater is called \_\_\_\_\_.

A. drilling

B. drilling and boring

 C. boring

D. turning

Câu 352: Cars , ships ,trains and planes are products of \_\_\_\_\_.

A. medical engineering

 B. mechanical engineering

C. civil engineering

D. mining engineering

Câu 353: The planer is intended to produce \_\_\_\_\_.

A. horizontal and diagonal cuts

B. diagonal, longitudinal , vertical and horizontal cuts

C. vertical, horizontal and diagonal

 D. vertical, diagonal and horizontal cuts

Câu 354: Scientists have been developing, and engineers testing, \_\_\_\_\_ that are lighter, stronger, and easier to fabricate than the aluminum and other metals currently used to form the outer skin of aircraft.

 A. non-metallic composite materials

B. non-metallic materials

C. composite materials

D. ceramic materials

Câu 355: How the fiber are oriented within the matrix depends on particular structural uses.

A. changed

B. drawn

C. described.

 D. arranged

Câu 356: Depending on how the fibers are intermixed within the matrix, composites can be made to get structural properties specifically \_\_\_\_\_ for a particular structural use.

A. suitable

- B. tailored
- C. appropriate
-  D. all are suitable

Câu 357: A primitive arm that could be programmed to perform specific tasks was developed \_\_\_\_\_.

-  A. in 1954
- B. in 1975
- C. in 1957
- D. in 1945

Câu 358: \_\_\_\_\_ can be used to force the molten metal through dies to make pipes.

-  A. Mechanisms
- B. Machines
- C. Metal bars
- D. Pressure

Câu 359: The basic multi-jointed concept of \_\_\_\_\_ is the template for most contemporary robots.

-  A. the Programmable Universal Manipulation Arm
- B. the Programmable Universal Multipurpose Arm
- C. the Programmable University Manipulation Arm
- D. the Progress Universal Manipulation Arm

Câu 360: Mining engineering belongs to both \_\_\_\_\_.

- A. medical and electronic
- B. mechanical and electronic
-  C. mechanical and electrical
- D. medical and electrical

Câu 361: Plastics can be dumped after use.

- A. reshaped
- B. threw as rubbish
- C. damaged
-  D. thrown as rubbish

Câu 362: Robots are able to \_\_\_\_\_ more quickly, cheaply, and accurately than humans.

- A. show repetitive tasks
-  B. perform repetitive actions
- C. perform repetitive processes
- D. work repetitive tasks

Câu 363: The rapid development of semiconductors for electronic industry gave material science its first major impetus.

- A. develop



- B. force
- C. forced
- D. developed

Câu 364: The specific strength and specific stiffness of continuous carbon fiber of PMCS can be vastly \_\_\_\_\_ than conventional metal alloys.



- A. better
- B. superior
- C. super
- D. harder

Câu 365: \_\_\_\_\_ doesn't require an electrical power source.



- A. Arc welding
- B. Gas welding
- C. Pressure welding
- D. Resistance welding

Câu 366: Wrought iron is recommended for components , for example, crane hook and railway couplings where \_\_\_\_\_.



- A. tensile strength is required.
- B. compressive strength is required.
- C. shear strength is required.
- D. tough strength is required.

Câu 367: Non-metallic composites are \_\_\_\_\_ to fabricate than the aluminum and other metals.



- A. lighter, stronger, and easier
- B. light, strong and easy
- C. cheaper, harder and easier
- D. cheap, hard and strong

Câu 368: A lathe can be used to make some products that have \_\_\_\_\_ shapes.



- A. cylindrical shapes
- B. screw threads
- C. conical shapes
- D. cylindrical or conical

Câu 369: If a metal is ductile, it can be \_\_\_\_\_ into another form.



- A. hammered
- B. pressed.
- C. stretched
- D. tension

Câu 370: \_\_\_\_\_ is a pulling force that acts in one direction.

- A. compression
-  B. tension
- C. tensile property
- D. torsion

Câu 371: Copper, silver and other metals have \_\_\_\_\_. They can be made into thin sheets or wires.

- A. ductile
-  B. ductile property
- C. property of ductile
- D. ductile proper

Câu 372: \_\_\_\_\_ combines the high strength of thin glass fibers with the ductility and chemical resistance of plastic.

- A. glass- fiber plastics
- B. a composite material
-  C. a glass- fiber reinforced plastic
- D. glass-fiber reinforcing plastic

Câu 373: \_\_\_\_\_ facilitates the work of a designer.

- A. CAD and CAM
- B. CAD and CAM technology
- C. CAM Technology
-  D. CAD Technology

Câu 374: The shaper is used chiefly to produce \_\_\_\_\_.

- A. any surface composed of flat, conical or thread elements
- B. any surface composed of straight line elements
-  C. flat surfaces
- D. none is correct

Câu 375: The fibers make up about \_\_\_\_\_ of a polymer matrix composite by volume.

- A. seventy percent
- B. fifty percent
-  C. sixty percent
- D. eighty percent

Câu 376: Concorde is built chiefly of \_\_\_\_\_.

- A. steel
- B. titanium.
-  C. aluminium
- D. chromium