BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Diploma in Mechanical Engineering
Course Name – Principle of Machine Tool
Course Code - DME603
(Semester VI)

Time allotted : 1 Hrs.15 Min.   **Full Marks : 60**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)   1 x 60=60

Choose the correct alternative from the following :

(1) Flank wear occurs mainly on the

   a) Nose part, front relief face and side relief face of the cutting tool
   b) Face of the cutting tool at a short distance from the cutting edge
   c) Cutting edge only
   d) Front face only

(2) Glazing in grinding wheels _____ cutting capacity.

   a) Has no effect on
   b) Increase
   c) None of these
   d) Decrease

(3) Tool signature consists of _____ elements.

   a) 3
   b) 4
   c) 5
   d) 7

(4) Angle between the rake face flank of tool and perpendicular line drawn from cutting point to base of tool is known as:

   a) Side rake angle
   b) Side relief angle
   c) End relief angle
   d) Back rake angle

(5) For large positive back rake angle, tool will be

   a) Weaker
   b) Stronger
   c) Smoother
   d) Harder

(6) Positive rake angle is given for machining of:

   a) Brittle material
   b) Ductile material
   c) Both hard and soft material
   d) Carbide material

(7) Which of the following will give maximum chip flow during machining?

a) Hard material

b) Ductile material

c) Brittle material

d) All of the mentioned

(8) For machining of carbide material which of the following tool will be preferred?

a) Large positive rake angle tools

b) Large negative rake angle tools

c) Zero rake angle tools

d) Small point angle tools

(9) Thermal cracking of tools occurs at

a) Low temperature

b) High temperature

c) Low cutting speed

d) High cutting speed

(10) What is the maximum allowed value of VB in mm for HSS tool used with cast iron work piece for rough machining?

a) 0.5

b) 1.5

c) 2

d) 2.5

(11) If a percentage of cobalt in Tungsten carbide tool increases, then toughness of tool will

a) Increase

b) Decrease

c) Remains Constant

d) First increase then decrease

(12) Which cutting condition affects the cutting temperature predominantly?

a) depth of cut

b) cutting speed

c) feed

d) cross feed

(13) The cutting tool removes the metal from workpiece in the form of

a) solid blocks

b) powder

c) chips

d) liquid

(14) The angle between side cutting edge and end cutting edge is called as

a) approach angle

b) nose angle

c) side relief angle

d) end relief angle

(15) Tool life in orthogonal cutting is

a) more than the tool life in oblique cutting

b) less than the tool life in oblique cutting

c) equal to the tool life in oblique cutting

d) cannot say

(16) The ascending order of evolution of materials used for making the cutting tools is

a) bronze – stone – steel – iron

b) iron – steel – bronze – stone

c) stone – bronze – iron – steel

d) bronze – stone – steel – iron

(17) The built up edge in cutting tools can be eliminated by

a) Fast cutting speed

b) Higher rake angles

c) High pressure cutting fluid

d) All the mentioned above

(18) Horizontal force exerted by tool on work piece is known as

a) Cutting force

b) Frictional resistance

c) Backing up force

d) Shear force

(19) Which of the following assumption is not valid for merchant circle diagram

a) Continuous Chips

b) Discontinuous chips

c) Cutting edge remains sharp

d) No built up edge

(20) Which of the following will have a maximum amount of chips during machining

a) Ductile material

b) Brittle material

c) Cast iron

d) carbide material

(21) Continuous chips with built up edge are formed during machining of

a) brittle metals
b) ductile metals
c) hard metals
d) soft metals

(22) In machining of a workpiece, the material is removed by____

a) drilling action
b) melting action
c) shearing acting
d) using brittleness of the material

(23) Feed is measured in units of ____

a) length/revolution
b) degree/revolution
c) length
d) velocity

(24) In CNC systems multiple microprocessors and programmable logic controllers work

_____

a) in parallel
b) in series
c) one after the other
d) for 80% of the total machining time

(25) In how many ways CNC machine tool systems can be classified?

a) 2
b) 3
c) 4
d) 5

(26) In part programming, interpolation is used for obtaining _____ trajectory

a) helicoidal
b) pentagonal
c) triangular
d) zig-zag

(27) For machining a mild steel workpiece by a high speed steel tool, the average cutting speed is

a) 5 m/min
b) 10 m/ min
c) 15 m/min
d) 30 m/min

(28) The machining of titanium is difficult due to

a) high thermal conductivity of titanium
b) chemical reaction between tool and work
c) low tool-chip contact area
d) high tool-chip contact area

(29) In machining metals, surface roughness is due to

a) feed marks or ridges left by the cutting tool
b) fragment of built up edge on the machined surface
c) cutting tool vibrations
d) all of the mentioned

(30) Ceramic tools are fixed to a tool body by _____

a) soldering
b) brazing
c) welding
d) clamping

(31) High speed steel tools retain their hardness upto a temperature of

a) 250
b) 350
c) 500
d) 900

(32) Which of the following parameters govern the value of the shear angle in continuous chip formation?

a) true feed
b) chip thickness
c) rake angle of the cutting tool
d) all of the mentioned

(33) In metal machining, the zone where the heat is generated due to friction between the moving chip and the tool face is called

a) friction zone
b) work tool contact zone

c) secondary shear zone   d) primary shear zone

(34) End of the work piece can be supported by using

    a) Headstock   b) Tailstock

    c) Tool Post   d) chuck

(35) Which of the following have a live centre?

    a) Tail stock   b) Headstock

    c) Tool post   d) chuck

(36) Which of the following is used to give power feed during cutting of threads?

    a) Rack and pinion   b) Planer mechanism

    c) Quick return mechanism   d) Using spilt nut

(37) Self centered chuck has ___ number of jaws.

    a) 10   b) 2

    c) 3   d) 1

(38) What are thread chasers?

    a) Multipoint cutting tool   b) Single point cutting tool

    c) A work holding device   d) anyone of the mentioned

(39) Which of the following is the part of feed mechanism?

    a) spindle gear   b) tumbler gear unit

    c) apron mechanism   d) all of the mentioned

(40) Table top drilling machine can be categorized as_____

    a) general purpose drilling machine   b) specific purpose drilling machine

    c) can't say anything   d) None

(41) Multi spindle drilling machine can be categorized as_____

    a) general purpose drilling machine   b) special purpose drilling machine

    c) can't say anything   d) None

(42) Grinding can be performed by_____

    a) using faceplates or angle plates   b) using chucks

    c) special attachments   d) None

(43) Which of the following is included in basic machine tools?

    a) lathe machine   b) production milling machine

    c) production drilling machine   d) None

(44) CNC machining centre does all the work_____

    a) milling machine   b) drilling machine

    c) both milling and drilling machine   d) double numerical control

(45) The main parts of shaper are _____

    a) base and body   b) ram and tool head

    c) crossrail and body   d) all of the mentioned

(46) Drive mechanism consists of _____

    a) main drives   b) the gear box

    c) quick return mechanism   d) all of the mentioned

(47) The thickness of the chip is _____ when the tooth begins its cut in downmilling.

    a) maximum   b) minium

c) 0   d) 2

(48) _____ is the speed at which the metal is removed by the tool from the work piece.

a) feed   b) deepth of cut

c) cutting speed   d) None

(49) Which of the following represent the unit of cutting speed?

a) meter*minute   b) meter*meter*minute

c) meter / minute   d) None

(50) Which of the following is the unit of the feed?

a) mm / minute   b) mm / revolution

c) mm * minute   d) None

(51) Which of the following represents the unit of metal removal rate?

a) mm/revolution   b) mm*mm/revolution

c) mm*mm*mm/revolution   d) None

(52) For general purposes, ratio of the depth of cut to the feed varies from_____

a) 10:1   b) 1:10

c) 0.868055555555555   d) 0.214583333333333

(53) Which of the following process is not grouped under metal removal process?

a) boring   b) milling

c) tumbling   d) rolling

(54) In which type of metal removal process, grinding is included?

a) conventional machining   b) abrasive process

c) nontraditional machining   d) None

(55) What is the function of the GUI(Graphical user interface)?

a) To control motion and speed   b) Converts program into the action of the driver

c) To record the data from the sensor   d) To understand the position of the tool according to the input program

(56) Sensors used in measurement systems are _____

a) speed and position sensor   b) consist of amplifier circuits, driving motors and ball lead screw

c) numerical control sensors   d) measurement sensors

(57) In the block diagram of the CNC machine, data processing and control loop are a part of

____

a) speed and position sensor   b) feedback system

c) machine control unit   d) input device

(58) Which does CNC stand for with respect to machine related manufacturing?

a) Computer Numb control   b) Computer Number control

c) Computer Numerical control   d) Computerised Numerical controller

(59) What is the full form of CAD?

a) Computer aided Design   b) Computer arts Design

c) Computer arts Designing   d) Computer assisted Design

(60) The following diverts the power at right angles towards the driving wheels

a) Torque tube   b) Transfer case

c) Final drive   d) Differential