## Program: BE Mechanical Engineering

## Curriculum Scheme: Revised 2016

## Examination: Third Year Semester V

## Course Code: MEDLO5012 and Course Name: MSTD

Time: 1 hour

Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	Force exerted by tool on chip normal to tool face is known as
Option A:	Cutting force
Option B:	Frictional resistance
Option C:	Backing up force
Option D:	Shear force
Q2.	If t1 denotes the uncut chip thickness and t2 denotes cut chip thickness ratio
	then, which of the following equation is correct about chip thickness ratio 'r'?
Option A:	r=t1-t2
Option B:	r=t2/t1
Option C:	r=t1*t2
Option D:	r=t1/t2
Q3.	In the orthogonal cutting of metals
Option A:	the cutting edge of the tool is perpendicular to the direction of tool travel
Option B:	the cutting forces occur in one direction only
Option C:	the cutting edge is wider than the depth of cut
Option D:	inclined at an angle less than 900 to the direction of tool travel
Q4.	A built-up-edge is generally formed while machining
Option A:	ductile materials at high speed
Option B:	ductile materials at low speed
Option C:	brittle materials at high speed
Option D:	brittle materials at low speed
Q5.	Secondary deformation zone in metal cutting operation is located at:
Option A:	Shear plane
Option B:	Tool chip interface
Option C:	Tool work piece interface
Option D:	Tool face
Q6.	If heat transferred to the atmosphere is neglected, then the average amount of
	heat in % carried away by chips is nearly equal to:
Option A:	70
Option B:	15

Option C:	20
Option D:	95
Q7.	Amount of heat generated in shear plane is:
Option A:	Directly proportional to shear angle
Option B:	Inversely proportional to shear angle
Option C:	Does not depend on shear angle
Option D:	None of the mentioned
Q8.	In the cutting fluid, which may be either a liquid or a gas is applied in
	the form of a fine jet under pressure.
Option A:	flooding
Option B:	jet application
Option C:	mist application
Option D:	manual application
Q9.	Which of the following tools are generally manufactured by Powder metallurgy?
Option A:	Low carbon steel
Option B:	Abrasives
Option C:	High carbon steel
Option D:	Cemented carbides
Q10.	Which of the following cutting tool has highest hot hardness?
Option A:	Cast alloys
Option B:	Ceramics
Option C:	High speed steel
Option D:	Carbon tool steel
Q11.	Presence of Chromium in T-series steel imparts
Option A:	Hardness
Option B:	Corrosion resistance
Option C:	Abrasion resistance
Option D:	Toughness
Q12.	If percentage of cobalt in Tungsten carbide tool increases, then the strength of
	the tool will
Option A:	Increase
Option B:	Remains Constant
Option C:	Decrease
Option D:	First increase then decrease
Q13.	Crater wear is predominant in
Option A:	carbon steels
Option B:	tungsten carbide tools
Option C:	high speed steel tools
Option D:	ceramic tools

Q14.	Crater wear is mainly due to the phenomenon is known as
Option A:	adhesion of metals
Option B:	oxidation of metals
Option C:	diffusion of metals
Option D:	none of the mentioned
Q15.	The relation between the tool life(T) in minutes and cutting speed (V) in m/min is
Option A:	VnT = C
Option B:	VTn = C
Option C:	Vn/T = C
Option D:	V/Tn = C
Q16.	Using the Taylor Equation for tool life and letting n = 0.5 and C = 120, calculate
	the percentage increase in tool life when the cutting speed is reduced by 50%.
Option A:	100%
Option B:	200%
Option C:	300%
Option D:	400%
Q17.	Angle between the rake face flank of tool and perpendicular line drawn from
	cutting point to base of tool is known as:
Option A:	Side rake angle
Option B:	Side relief angle
Option C:	End relief angle
Option D:	Back rake angle
Q18.	Angle between end cutting edge and axis of tool is known as:
Option A:	Side rake angle
Option B:	Side relief angle
Option C:	End cutting edge angle
Option D:	Back rake angle
Q19.	With an increase in lip angle keeping side rake angle constant, strength of tool.
Option A:	Increases
Option B:	Decreases
Option C:	Remains constant
Option D:	None of the mentioned
Q20.	Orthogonal clearance and side clearance of a turning tool will be same if
Option A:	φ = 30
Option B:	φ = 45
Option C:	φ = 60
Option D:	φ = 90
Q21.	A cutting tool can never have its

Option A:	rake angle – positive
Option B:	rake angle – negative
Option C:	clearance angle – positive
Option D:	clearance angle – negative
Q22.	The tool life equation for HSS tool is VT0.14f0.7d0.4 = Constant. The tool life (T)
	of 30 min is obtained using the following cutting conditions: V= 45 m/min, f =
	0.35 mm, d =2.0 mm. If speed (V), feed (f) and depth of cut (d) are increased
	individually by 25%, the tool life (in min) is
Option A:	0.15
Option B:	1.06
Option C:	22.50
Option D:	30.0
Q23.	A typical turning tool can be specified in NRS system as:-10°, -6°, 10°, 5°, 15°,
	60º, 0.8 (mm),in which 60º is
Option A:	Inclination Angle
Option B:	Auxiliary Normal Clearance Angle
Option C:	Principal Cutting Edge Angle
Option D:	Nose Radius
Q24.	In an orthogonal cutting process the tool used has rake angle of zero degree. The
	measured cutting force and thrust force are 500 N and 250 N, respectively. The
	coefficient of friction between the tool and the chip is
Option A:	0.7
Option B:	0.6
Option C:	0.5
Option D:	0.9
Q25.	Which of the following assumption is not valid for merchant circle diagram?
Option A:	Continuous Chips
Option B:	Sharphess of cutting edge reduces gradually
	Sharphess of cutting cuge reduces gradually
Option C:	Cutting edge remains sharp