Co-funded by the European Union

Test date: _____

Name, surname: _____ _____

TEST PERFORMANCE RULES

The duration of the test is 1.5 hours. (90 min.)

Directions:

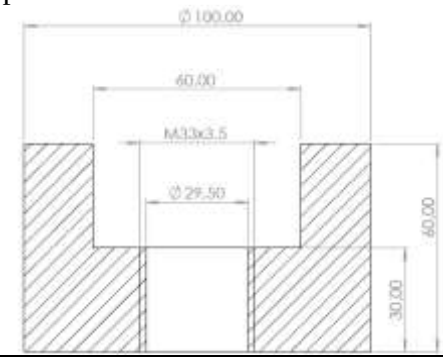
1. No additional sources of information may be used during the test.
2. There is only one correct answer in the tasks.
3. Write the letter of the correct answer in the box on the answer sheet, for example: 1 A
4. If more than one answer option is marked, or none of the answer options is marked, this task is considered to have been completed incorrectly.
5. The value of a correct answer is 1 point.

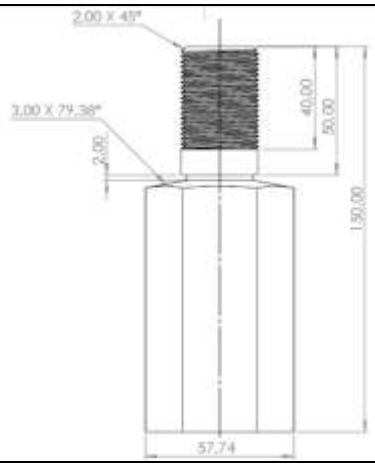
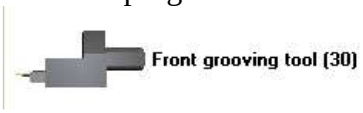
The test is considered passed if the student collects at least 50 percent of correct answers from each of the specified competencies and the total number of test answers is greater than 50 percent.

EVALUATION TABLE

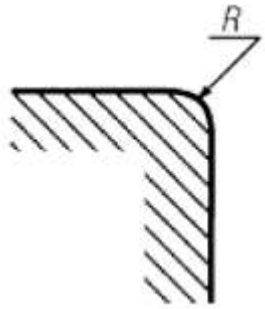
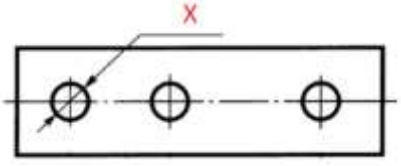
PERCENTAGES	POINTS COLLECTED	ASSESSMENT SCORES
Less than 50 %	**Up to 25**	**4**
50-60 %	**26 – 29**	**5**
61-70 %	**30 - 33**	**6**
71-80 %	**34 – 37**	**7**
81-90 %	**38 – 41**	**8**
91-95 %	**42 – 44**	**9**
96-100 %	**45 - 50**	**10**

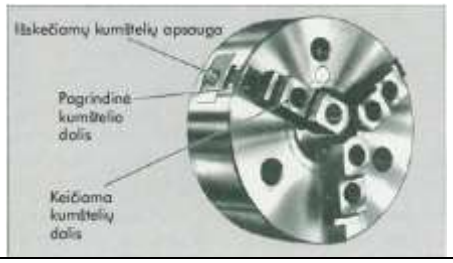
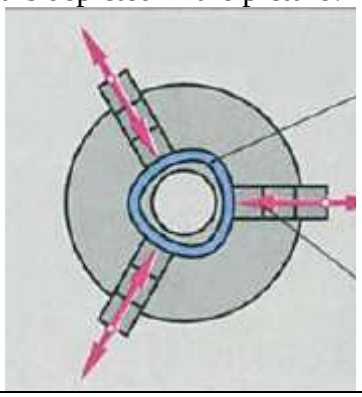
No.	Question	Answer options	Correct answer
1.	What is a nominal dimension?	A. The main dimension of the part; B. Auxiliary dimension of the part; C. Major diameter of the roll.	A
2.	What is surface roughness?	A. Micro geometric surface irregularities; B. Surface appearance (glossy or matte); C. Surface smoothness.	A
3.	What does this symbol  mean?	A. The surface is formed without removing the chip; B. The method of surface treatment is not indicated; C. The surface is processed by cutting.	C
4.	What is Milling?	A. Milling is the mechanical processing of materials, when the work tool (mill) cuts off a chip of the specified thickness from the workpiece surface while rotating and moving along the surface of the part; B. A preparation process that is used to prepare the workpiece prior to production; C. A machining process that changes the mechanical characteristics of the workpiece.	A
5.	Describe thread milling:	A. During milling, the cutter profile is cut into the workpiece; B. Cylindrical surfaces are milled, giving a helical feed; C. Helical surfaces are milled by providing feed in a helical line.	C
6.	Describe face milling:	A. Cylindrical surfaces are milled, giving a circumferential feed; B. Helical surfaces are milled by providing feed in a helical line; C. During milling, the cutter profile is cut into the workpiece.	C
7.	What are the basic principles of operation of milling machines?	A. Rotary machine drills shave or cut off the relevant part of the material. If necessary, it is cut into parts; B. The machine rotates the material on the shaft and	A

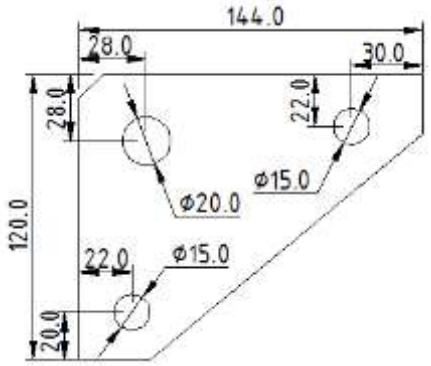
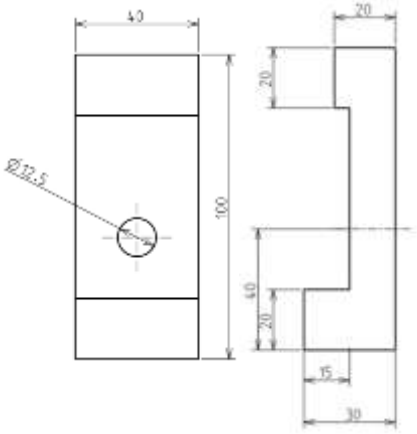
		thus cuts out the desired shape of the material; C. The machine grinds the material to the desired shape with a rotary abrasive wheel.	
8.	What is the first step after hearing a loud noise from a machine?	A. Unplug the machine from the power supply; B. Press the emergency STOP button; C. Notify foreman.	B
9.	What should be checked after installing the tool?	A. Is the tool properly installed and tightened; B. Is there a work program prepared; C. Are there metal shavings in the workplace.	A
10.	What is the brand of structural steel?	A. P235; B. S235; C. F235.	B
11.	What tools are used to drill through a ø20 mm hole?	A. 20 mm hand cutter; B. Centering, drill bit 10 mm and 20 mm drill bit; C. 15 mm drill bit and 20 mm drill bit.	B
12.	What is the main factor affecting the hardness of steel?	A. The amount of copper in the alloy; B. The amount of iron in the alloy; C. The amount of carbon in the alloy.	C
13.	If the steel workpiece is thermally tempered, how does this affect its mechanical processing?	A. No affect; B. The workpiece is more difficult to process; C. The workpiece is processed more easily.	C
14.	What is the function of the expander?	A. To widen through holes slightly beyond the specified size; B. For cutting slopes with a hole; C. For forming surfaces, holes or cavities.	A
15.	What is the function of the dredger?	A. For forming surfaces, holes or cavities; B. For processing cylindrical, conical, spherical, shaped and flat ends; C. For chamfering with a hole.	C
16.	What machine should be used to make this part? 	A. Lathe machines; B. Milling machines; C. Plasma/laser.	B
17.	What machine should be used to make this part?	A. Lathe machines; B. Milling machines; C. Plasma/laser.	A

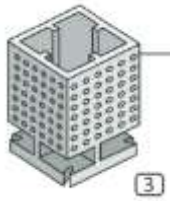
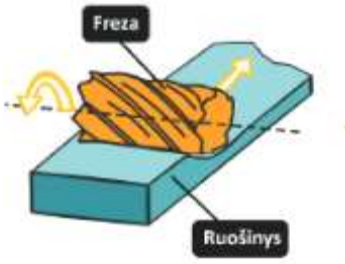
			
18.	What is the purpose of this tool in the MTS program? 	A. For engraving; B. For turning grooves on the front surface; C. Front tool holder.	B
19.	What cycle is used to mill pockets in the MTS program?	A. G34, G35, G38, G80 ir G90; B. G34 ir G90; C. Pockets are milled only with the help of the G01 command.	A
20.	Why do you need tool radius compensation?	A. To mill an uneven surface; B. To describe the work process by describing only the desired feature of the part and not the exact tool path; C. Tool wear is compensated during machining to produce the most accurate dimension possible.	B
21.	What is the drill for?	A. Designed for drilling cylindrical holes; B. For forming surfaces, holes or cavities; C. To widen through holes slightly beyond the specified size.	A
22.	What maintenance is required for the gripper?	A. To clean and to lubricate with anti-coolant grease; B. To clean with compressed air; C. To clean the chips with a brush every day.	A
23.	What maintenance is required for the clamp?	A. To clean and to lubricate with anti-coolant grease; B. To clean with compressed air; C. To clean the chips with a brush every day.	A
24.	What maintenance is required for a tool changer?	A. To change the oil every month and to lubricate. B. To check the oil level once a week and to top up if necessary. C. To remove all tools from holder and clean monthly.	B

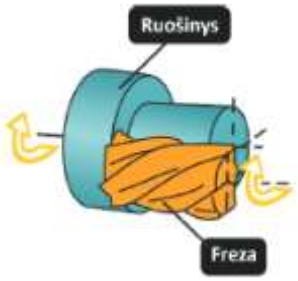
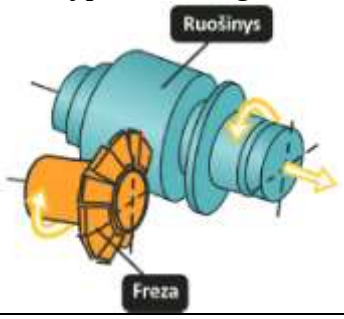
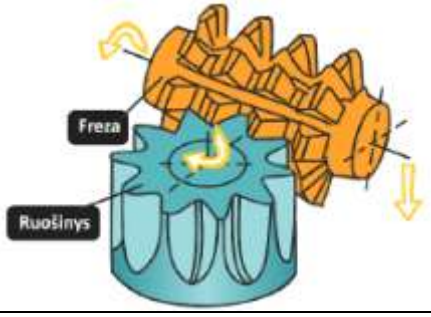
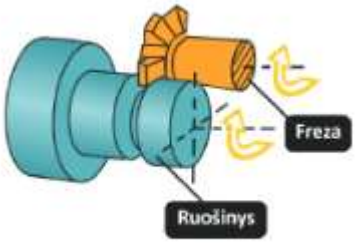
25.	What maintenance is required for the oil reservoir?	A. To change the oil every month and to lubricate. B. To sheck the oil level once a week and to top up if necessary. C. To drain and clean the tank monthly.	B
26.	What for do you need a milling cutter?	A. For drilling cylindrical holes. B. For forming surfaces, holes or cavities. C. For processing cylindrical, conical, spherical, shaped and flat ends.	B
27.	What parameters are needed for turning a shaped surface with the G71 command?	A. Description of cutting depth, cutting speed and machined contour. B. Description of the machined contour with G code. C. S, P and V components.	A
28.	What are knives needed for?	A. For processing cylindrical, conical, spherical, shaped and flat ends. B. For forming surfaces, holes or cavities. C. For chamfering with a hole.	A
29.	What is cutting speed?	A. Shift of the cutting surface, relative to the cutting edge of the tool, speed (m/min). B. Tool or workpiece displacement per time unit. (mm/min, may also be mm/rev); C. Material thickness cut in one tool pass.	A
30.	What is a propulsion?	A. Speed of displacement of the cutting surface relative to the cutting edge of the tool (m/min). B. Tool or workpiece displacement per time unit. (mm/min, may also be mm/rev). C. Material thickness cut in one tool pass.	B
31.	What should be considered when basing the workpieces?	A. Is the base part in the form of a roll. B. Are the underlying surfaces non-convex and smooth. C. Are the base surfaces perpendicular to each other.	B
32.	What does the G00 function mean?	A. Quick positioning movement. B. Motion of linear interpolation. C. Clockwise movement of circular interpolation.	A
33.	What does the G01 function mean?	A. Quick positioning movement. B. Motion of linear interpolation. C. Clockwise movement of circular interpolation.	B
34.	What does the G02 function mean?	A. Quick positioning movement. B. Motion of linear interpolation. C. Clockwise movement of circular interpolation.	C
35.	What G-commands should the job program started with?	A. G54 G90 G17 B. G95 G19 G54 C. G54 G21 G0 F100	A

36.	What does machine zero point mean?	A. The machine zero point is set at the beginning of each program. B. The machine zero point is the machine coordinate zero point set by the programmer. C. The machine zero point is the common point of machine coordinates. It is set by the machine tool manufacturer and cannot be changed.	C
37.	When are special tools needed?	A. To process complex surfaces. B. When drilling. C. When milling various holes.	A
38.	If the tool is not used for its intended purpose, what can happen?	A. The tool may wear out or break. B. The tool will perform the function, but not as effectively. C. The tool will perform the function and nothing will happen.	A
39.	When measuring with a micrometer, at what angle should the measuring scale be viewed?	A. 90°. B. 65°. C. It doesn't matter.	A
40.	When fixing the workpiece for processing in the machine, it must be...	A. Placed in clamps. B. Set in such a way that the axes of the workpiece coordinate system are parallel to the axes of the machine tool coordinate system. C. Set in such a way that the axes of the workpiece system are perpendicular to the coordinate axes of the machine tool.	B
41.	What is denoted by this letter? 	A. marking of a rounded corner. B. Marking of corner rounding diameter. C. Marking of corner rounding radii.	C
42.	What notation is most appropriate for the position X? 	A. Ø8 B. R8 C. 3x Ø8 D. 3x R8	C
43.	What is denoted by the letter P?	A. Aluminum. B. Stainless steel.	C

		C. Steel.	
44.	What does this symbol mean? 	A. Rotating parts warning. B. Warning of Potential Injury. C. Warning of lifted loads.	A
45.	What does this symbol mean? 	A. Warning about the danger of internal transport. B. Warning of unsafe transportation. C. Dangerous Goods Warning.	A
46.	What does the emergency stop button look like?	A. It is bright red in color. B. It is bright yellow in color. C. The color may be different from the device.	A
47.	What kind of fixture is this? 	A. Three-cam chuck. B. Dividing head. C. Three cam clamp.	A
48.	When are four cam chucks used?	A. To base the prisms. B. When more pressing force is required. C. When a larger clamping surface is required or when adapting to the shape of the workpiece.	C
49.	What is depicted in the picture? 	A. Fixing the workpiece in the lathe. B. Crushing of thin-walled pipe by applying excessive compressive force. C. The direction of movement of the gripper cams.	B
50.	What is the optimal way to do this part? The thickness of the part is 10 mm.	A. Turning. B. Milling. C. Laser/Plasma cutting.	C

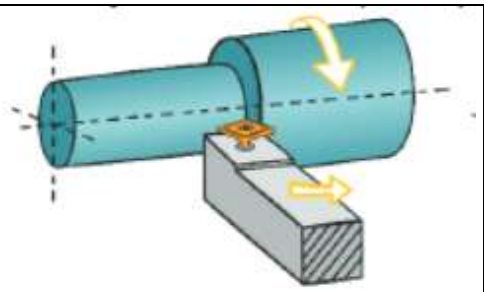
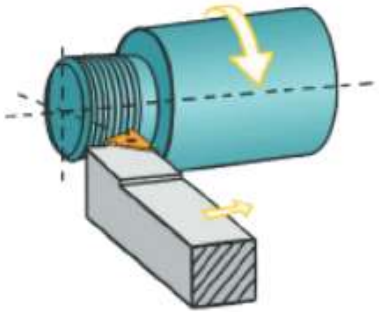
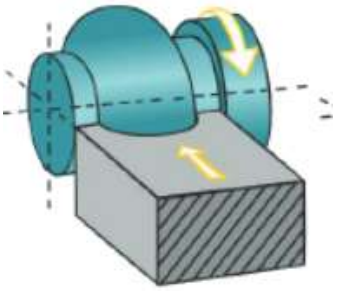
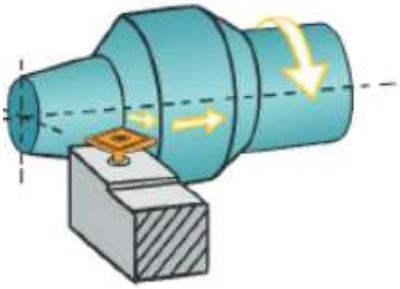
			
51.	What tools are needed for this part? 	A. 10 mm hand mill and 12.5 drill bit. B. End mill 50 mm, centering, drill 12.5 mm. C. End mill 120 mm, centering, reamer 10 mm and drill 12.5 mm.	B
52.	What surfaces cannot be machined with milling machines?	A. Cylindrical. B. Shaped. C. Vertical.	A
53.	Copy-milling machines are designed to...	A. perform processing using a copier. B. perform machining by copying the drawing. C. perform machining by copying the CNC program.	A
54.	What is the most important thing when fixing a part in a clamps?	A. Resistance to static forces. B. Stiffness. C. Strength of clamps.	B
55.	When fixing a 3 mm thick brass part in clamps, it is important that...	A. The part would have protruded above the lips of the clamps. B. The part would not have come out of the gauges of the clamps. C. The clamping force would not deform the part.	C
56.	What is the effect of damaged press lip surfaces?	A. Rigidity of the part. B. Rigidity of the clamp structure. C. Accuracy of re-fixation of the part.	C
57.	What kind of device is this?	A. Body mounting device. B. Corresponding modification of the machine table. C. 4 axis milling machine table.	A

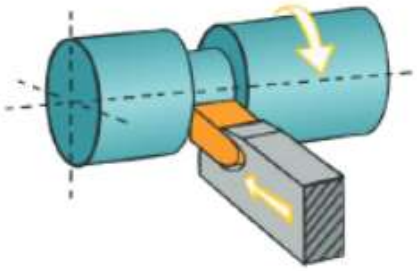
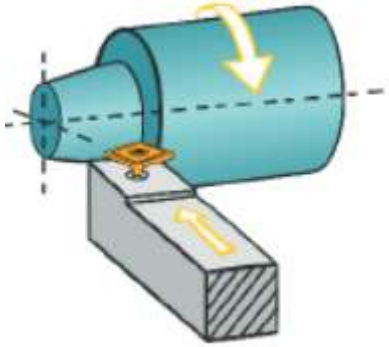
			
58.	What is the purpose of clamps? 	A. Attach the clamps to the work table. B. Fasten the part to the work table. C. Fasten the tools to the work table.	B
59.	What is the purpose of a rotary table?	A. In order to perform radial milling operations. B. To rotate the part at a different angle. C. To perform turning operations on milling machines.	A
60.	Milling is -	A. When both the workpiece and the milling cutter are moving. B. When the workpiece rotates and the milling cutter does not move. C. When the milling cutter rotates and the workpiece does not move.	C
61.	What type of milling is shown here? 	A. Contour milling. B. Form milling. C. Planar milling.	C
62.	What type of milling is shown here?	A. Circular milling. B. Contour milling. C. Shape milling.	A

			
63.	What type of milling is shown here? 	A. Milling by rolling. B. Face milling. C. Thread milling.	C
64.	What type of milling is shown here? 	A. Planar milling. B. Thread milling. C. Milling by rolling.	B
65.	What type of milling is shown here? 	A. Contour milling. B. Thread milling. C. Shape milling.	C
66.	What type of milling is shown here? 	A. Contour milling. B. Milling by rolling. C. Planar milling.	A

67.	What milling cutters are shown here? 	A. End cutters. B. Disc cutters. C. Grooved cutters.	B
68.	What milling cutters are shown here? 	A. Cylindrical cutters. B. End cutters. C. Plate cutters.	B
69.	What milling cutters are shown here? 	A. Cylindrical cutters. B. Grooving cutters. C. Glove cutters.	A
70.	What milling cutters are shown here? 	A. End cutters. B. Cylindrical cutters. C. Glove cutters.	C
71.	What milling cutter is shown here? 	A. Wedge cutter. B. Grooving cutter. C. T-shaped cutter.	C
72.	What forms are impossible to turn?	A. Rectangular. B. Cylindrical. C. Screws.	A
73.	What is the difference between	A. Simple lathes do not have a tool magazine.	B

	ordinary lathes and universal one?	B. Simple lathes do not have a screw drive. C. Simple lathes do not have a carriage.	
74.	What type of chuck should be used when clamping a rectangular workpiece?	A. Three cams. B. Four cams. C. Six-cam.	B
75.	What is the purpose of the bearing?	A. To center the part. B. Holds the long part while turning it. C. Transmit torque to the workpiece.	C
76.	What is the purpose of the lunette?	A. To center the part. B. Holds the long part while turning it. C. Transmit torque to the workpiece.	B
77.	What is the purpose of the center?	A. To center the part. B. Holds the long part while turning it. C. Transmit torque to the workpiece.	A
78.	What a device it is? 	A. Turning panel. B. Undercoat. C. Pinole.	A
79.	What a device it is? 	A. Caliper with four-position bracket. B. Revolver head with four position holder. C. Cover with four position holder.	A
80.	When turning is done...	A. The blade rotates on its axis. B. The part rotates around its axis. C. All options are correct.	B
81.	What is the name of this operation?	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting.	A

		D. Grooving. E. Form turning. F. Cone turning.	
82.	What is the name of this operation 	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting. D. Grooving. E. Form turning. F. Cone turning.	C
83.	What is the name of this operation? 	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting. D. Grooving. E. Form turning. F. Cone turning.	E
84.	What is the name of this operation? 	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting. D. Grooving. E. Form turning. F. Cone turning.	B
85.	What is the name of this operation?	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting. D. Grooving. E. Form turning. F. Cone turning.	D

			
86.	What is the name of this operation? 	A. Longitudinal turning. B. Transverse end turning. C. Thread cutting. D. Grooving. E. Form turning. F. Cone turning.	F
87.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	A
88.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	C
89.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	B
90.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	D
91.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel	E

		D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	
92.	What kind of material is it? 	A. Steel B. Cast iron C. Stainless steel D. Aluminum E. Titanium and heat resistant alloys F. Hardened steel	F
93.	What is depth of cut and what is its unit of measurement?	A. This is the material layer removed in one pass (mm); B. It is the number of revolutions of the workpiece (part) or cutting tool per unit of time (rpm); C. It is the distance traveled by the tool during cutting in one minute during machining (m/min); D. This is the intended displacement, feed (mm/rev or mm/tooth) of the cutting tool or workpiece.	A
94.	What is propulsion and what is its unit of measurement?	A. This is the intended displacement, feed (mm/rev or mm/tooth) of the cutting tool or workpiece; B. It is the number of revolutions of the workpiece (part) or cutting tool per unit of time (rpm); C. It is the distance traveled by the tool during cutting in one minute during machining (m/min); D. This is the material layer removed in one pass (mm).	A
95.	What is cutting speed and what is its unit of measurement?	A. This is the material layer removed in one pass (mm); B. It is the number of revolutions of the workpiece (part) or cutting tool per unit of time (rpm); C. This is the intended displacement, feed (mm/rev or mm/tooth) of the cutting tool or workpiece; D. It is the distance traveled by the tool during cutting in one minute during machining (m/min).	D
96.	What is rotational frequency and what is its unit of measurement?	A. This is the material layer removed in one pass (mm); B. This is the intended displacement, feed (mm/rev or mm/tooth) of the cutting tool or workpiece; C. It is the distance traveled by the tool during cutting in one minute during machining (m/min); D. It is the number of revolutions of the workpiece (part) or cutting tool per unit of time (rpm).	D
97.	How long will it take to drain 100 mm of the part, when the cutting modes are as follows: - 100 rpm - 1 mm/rev	A. 30 sec. B. 60 sec. C. 90 sec.	B

98.	How long will it take to drain 50 mm of the part when the cutting modes are: - 800 rpm - 100 mm/min	A. 30 sec. B. 60 sec. C. 90 sec.	A
99.	How long will it take to drill a 375mm hole with the following feeds: - 500 rpm - 0.5 mm/rev	A. 30 sec. B. 60 sec. C. 90 sec.	C
100.	Which part cannot be cast from a round bar?		C

The test consisted of: VET teacher Justinas Dundulis

Disclaimer: Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.