TNPSC CTSE-ITI

PDF TEST BATCH ₹ 500/-

CODE: 534

ADVANCED CNC MACHINIG TECHNICIAN

UNIT WISE MCQ QUESTIONS WITH ANSWER EXPLANATION

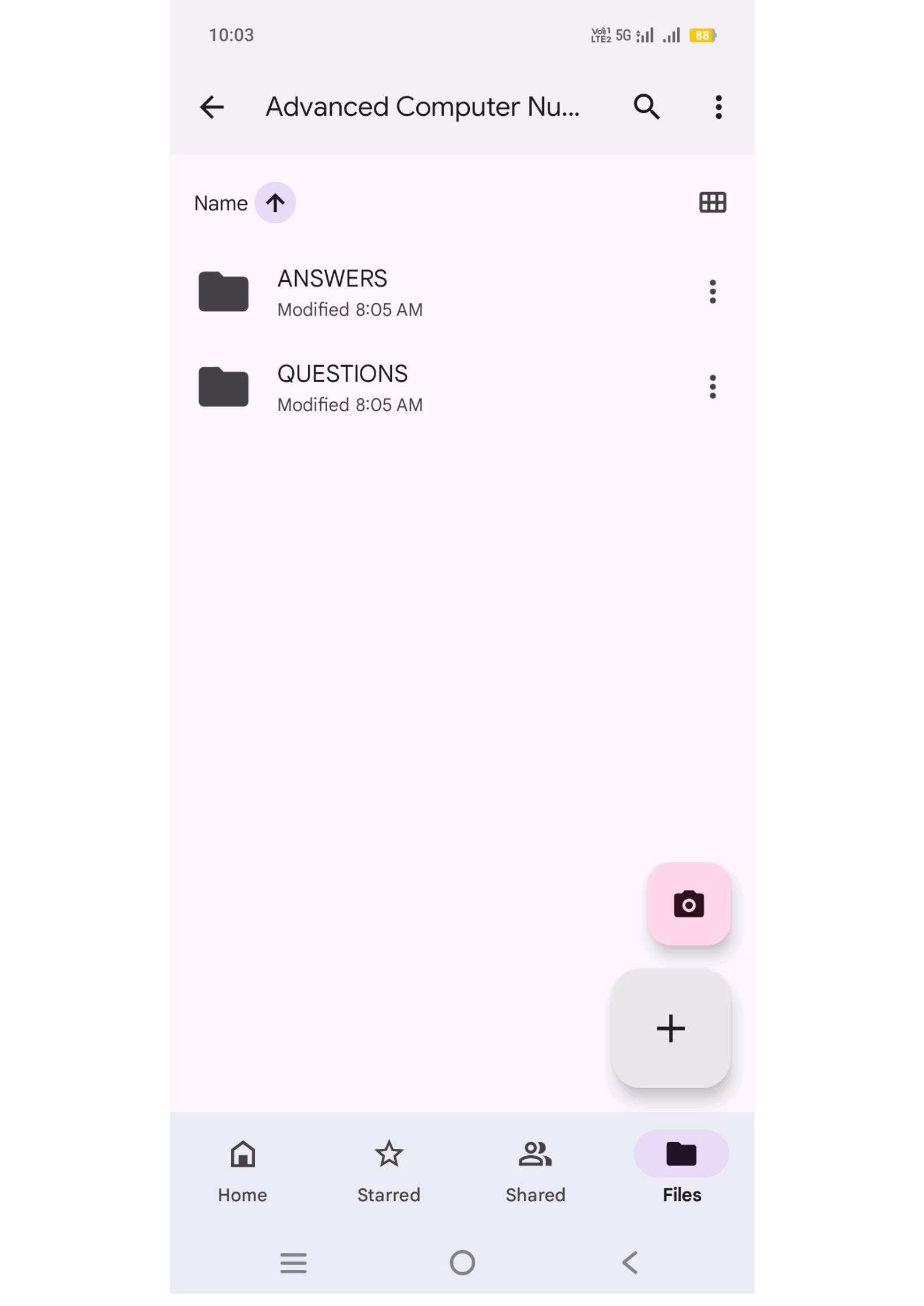
Pdf Sample Available Our Website

www.rlaacademy.com

ENGLISH MEDIUM

For More Details

96004 20486


10:03
Advanced Computer Nu...
Name
ANSWERS
Modified 8:05 AM
QUESTIONS
Modified 8:05 AM
Home
Starred
Shared
Files

- Unit 01 General Safety Precaution ...
  Modified 3:45 AM
- Unit 02 Perform Turning, Milling O...
  Modified 3:44 AM
- Unit 03 Product specification and ...
  Modified 3:45 AM
- Unit 04 Introduction CNC Machine...
  Modified 3:45 AM
- Unit 05 CNC Turning-QUESTION.p...
  Modified 3:46 AM
- Unit 06 VMC Machines-QUESTIO...
  Modified 3:47 AM
- Unit 07 Routine Maintenance and ...
  Modified 3:47 AM
- Unit 08 VMC G Code and M Code ...
  Modified 3:49 AM
- Unit 09 Computer Aided Machinin...
  Modified 3:48 AM
- Unit 10 4th Axis on VMC-QUESTIO...
  Modified 3:49 AM

Name

- Unit 01 General Safety Precaution ...
  Modified 3:51 AM
- Unit 02 Perform Turning, Milling O...
  Modified 3:52 AM
- Unit 03 Product specification and ...
  Modified 3:51 AM
- Unit 04 Introduction CNC Machine...
  Modified 3:53 AM
- Unit 05 CNC Turning-ANSWERS.pdf
  Modified 3:53 AM
- Unit 06 VMC Machines-ANSWERS...
  Modified 3:53 AM
- Unit 07 Routine Maintenance and ...
  Modified 3:54 AM
- Unit 08 VMC G Code and M Code .
  Modified 3:55 AM
- Unit 09 Computer Aided Machin
  Modified 3:55 AM
- Unit 10 4th Axis on VMC-ANSW
  Modified 3:54 AM

UNIT 01-GENERAL SAFETY PRECAUTION AND FIRST AID

QUESTIONS

Q1. What is the primary objective of workplace safety measures?

A) Increase production speed

B) Reduce training costs

C) Minimize accidents and injuries

D) Enhance product aesthetics

Q2. Which of the following is a proactive approach to workplace safety?

A) Waiting for accidents to occur

B) Conducting regular safety audits

C) Ignoring minor hazards

D) Relying solely on personal experience

Q3. Which PPE is essential for protecting the eyes from flying debris during metal cutting operations?

A) Safety goggles

B) Earplugs

C) Respirator mask

D) Safety shoes

Q4. What type of gloves should be used when handling sharp metal objects?

A) Cotton gloves

B) Leather gloves

C) Rubber gloves

D) Nitrile gloves

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

Q5. What is the first step in administering first aid to a person who has suffered a burn?

A) Apply ice directly to the burn

B) Cover the burn with a dry cloth

C) Cool the burn under running water

D) Apply butter to the burn area

Q6. In the event of an electrical shock, what is the first action to take?

A) Pull the person away from the source

B) Turn off the power source

C) Perform CPR immediately

UNIT 01-GENERAL SAFETY PRECAUTION AND FIRST AID

ANSWERS & EXPLANTION

Q1. What is the primary objective of workplace safety measures?

A) Increase production speed

B) Reduce training costs

C) Minimize accidents and injuries

D) Enhance product aesthetics

✅ **Answer: C**

Explanation: The main goal of safety measures is to prevent accidents and injuries, ensuring a safe working environment.

Q2. Which of the following is a proactive approach to workplace safety?

A) Waiting for accidents to occur

B) Conducting regular safety audits

C) Ignoring minor hazards

D) Relying solely on personal experience

✅ **Answer: B**

Explanation: Regular safety audits help identify and mitigate potential hazards before they result in accidents.

Q3. Which PPE is essential for protecting the eyes from flying debris during metal cutting operations?

A) Safety goggles

B) Earplugs

C) Respirator mask

D) Safety shoes

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
RLA ACADEMY
TNPSC
TNMAWS
SSC
RRB
TRB

✅ **Answer: A**

Explanation: Safety goggles shield the eyes from particles and debris generated during metal cutting.

Q4. What type of gloves should be used when handling sharp metal objec

A) Cotton gloves

B) Leather gloves

C) Rubber gloves

D) Nitrile gloves

✅ **Answer: B**

Explanation: Leather gloves provide durability and protection against cuts

UNIT 02: PERFORM TURNING, MILLING OPERATIONS

QUESTIONS

Q1. Which of the following is not a part of a lathe machine?

A) Bed

B) Saddle

C) Carburetor

D) Chuck

Q2. Which type of lathe is most suitable for high precision work?

A) Bench Lathe

B) Engine Lathe

C) Tool Room Lathe

D) Capstan Lathe

Q3. Which of the following is NOT considered a work holding device?

A) Faceplate

B) Chuck

C) Mandrel

D) Wrench

Q4. In taper turning using compound rest, what is the cutting angle derived from?

A) Tool angle

B) Lead screw pitch

C) Included angle of taper

D) Cutting speed

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

Q5. Which operation produces a rough surface finish and is often used for gripping?

A) Facing

B) Turning

C) Knurling

D) Threading

Q6. What is the main purpose of using a jig in machining?

A) Hold and guide the cutting tool

B) Cool the tool

C) Improve surface finish

UNIT 02: PERFORM TURNING, MILLING OPERATIONS

ANSWERS & EXPLANTION

Q1. Which of the following is not a part of a lathe machine?

A) Bed

B) Saddle

C) Carburetor

D) Chuck

✓ Correct Answer: C) Carburetor

Explanation: A carburetor is a component found in internal combustion engines, not in lathe machines.

Q2. Which type of lathe is most suitable for high precision work?

A) Bench Lathe

B) Engine Lathe

C) Tool Room Lathe

D) Capstan Lathe

✓ Correct Answer: C) Tool Room Lathe

Explanation: Tool Room lathes are designed for high-accuracy, fine-tolerance machining operations.

Q3. Which of the following is NOT considered a work holding device?

A) Faceplate

B) Chuck

C) Mandrel

D) Wrench

✓ Correct Answer: D) Wrench

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
RLA ACADEMY
TNPSC
TNMAWS
SSC
RRB
TRB

Explanation: A wrench is a tool used for tightening/loosening, not for holding workpieces on a lathe.

Q4. In taper turning using compound rest, what is the cutting angle derived from?

A) Tool angle

B) Lead screw pitch

C) Included angle of taper

D) Cutting speed

✓ Correct Answer: C) Included angle of taper

Explanation: The compound rest is swiveled to half the included angle of the taper for accurate turning.

UNIT 03 PRODUCT SPECIFICATION AND INTERPRET INDUSTRIAL ENGINEERING DRAWING AND QUALITY OF SURFACE

QUESTIONS

1. Which of the following best describes the purpose of a product specification report?

A) To list all customer complaints about the product

B) To define technical requirements, dimensions, and quality standards of a product

C) To describe the marketing strategy for the product

D) To document employee training procedures

2. Which symbol represents a diameter in industrial engineering drawings?

A) Ø

B) ⊥

C) ≈

D) ±

3. What is meant by geometric tolerance in a drawing?

A) The exact size of the part

B) The permissible variation in the shape, orientation, or position of a feature

C) The material specification of the product

D) The marketing tolerance for customer demand

4. In a limit dimension system, what does the term basic size mean?

A) The smallest allowable size

B) The nominal size from which limits of size are derived

C) The largest allowable size

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

D) The average of max and min sizes

5. What does the symbol "±" indicate in dimensioning?

A) Direction of machining

B) The range of acceptable variation from the nominal dimension

C) The surface roughness

D) The material hardness

6. Which of the following is NOT a standard symbol used for surface finish?

A) Ra

B) Rz

UNIT 03 PRODUCT SPECIFICATION AND INTERPRET INDUSTRIAL ENGINEERING DRAWING AND QUALITY OF SURFACE

ANSWERS & EXPLANTION

1. Which of the following best describes the purpose of a product specification report?

A) To list all customer complaints about the product

B) To define technical requirements, dimensions, and quality standards of a product

C) To describe the marketing strategy for the product

D) To document employee training procedures

Answer: B

Explanation: A product specification report details technical parameters and requirements essential for product development and quality control.

2. Which symbol represents a diameter in industrial engineering drawings?

A) Ø

B) ⊥

C) ≈

D) ±

Answer: A

Explanation: The diameter symbol "Ø" indicates circular dimensions such as holes or shafts.

3. What is meant by geometric tolerance in a drawing?

A) The exact size of the part

B) The permissible variation in the shape, orientation, or position of a feature

C) The material specification of the product

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

D) The marketing tolerance for customer demand

Answer: B

Explanation: Geometric tolerance specifies allowable limits for form and position errors to ensure functionality and interchangeability.

4. In a limit dimension system, what does the term basic size mean?

A) The smallest allowable size

B) The nominal size from which limits of size are derived

C) The largest allowable size

D) The average of max and min size

Answer: B

UNIT 04 INTRODUCTION CNC MACHINES

QUESTIONS

1. What is the primary function of the G00 code in CNC programming?

A) Linear interpolation at specified feed rate

B) Rapid traverse to a specified position

C) Circular interpolation clockwise

D) Circular interpolation counterclockwise

2. Which G-code is used for linear interpolation at a specified feed rate?

A) G00

B) G01

C) G02

D) G03

3. What is the function of the M03 code in CNC programming?

A) Spindle stop

B) Spindle start clockwise

C) Spindle start counterclockwise

D) Program end

4. Which M-code is used to stop the spindle?

A) M00

B) M01

C) M05

D) M30

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

5. What does the M30 code signify in a CNC program?

A) Optional stop

B) Program stop

C) Spindle stop

D) Program end and rewind

6. What is the primary purpose of the emergency stop (E-stop) button o CNC machine?

A) To pause the program temporarily

B) To stop the machine immediately in case of an emergency

C) To reset the machine to its home position

UNIT 04 INTRODUCTION CNC MACHINES

ANSWERS & EXPLANTION

1. What is the primary function of the G00 code in CNC programming?

A) Linear interpolation at specified feed rate

B) Rapid traverse to a specified position

C) Circular interpolation clockwise

D) Circular interpolation counterclockwise

Answer: B

Explanation: G00 is used for rapid traverse movements, allowing the tool to move quickly to a specified position without concern for the feed rate. This is typically used for non-cutting movements to reduce machining time.

2. Which G-code is used for linear interpolation at a specified feed rate?

A) G00

B) G01

C) G02

D) G03

Answer: B

Explanation: G01 is used for linear interpolation, moving the tool in a straight line at a specified feed rate. This is commonly used for cutting operations.

3. What is the function of the M03 code in CNC programming?

A) Spindle stop

B) Spindle start clockwise

C) Spindle start counterclockwise

D) Program end

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

Answer: B

Explanation: M03 starts the spindle rotation in the clockwise direction, which is standard for most machining operations.

4. Which M-code is used to stop the spindle?

A) M00

B) M01

C) M05

D) M30

Answer: C

Explanation: M05 is used to stop the spindle rotation, halting any cutting or movement associated with the spindle.

UNIT 05 CNC Turning

QUESTION

1. In CNC turning, the primary function of the CNC controller is to:

A. Control the spindle speed only

B. Manage tool changes manually

C. Interpret and execute part programs

D. Operate the coolant system exclusively

2. Which of the following is a key advantage of CNC machines over manual machines?

A. Higher power consumption

B. Increased operator intervention

C. Enhanced precision and repeatability

D. Limited to simple operations

3. In a CNC turning center, the component responsible for holding and rotating the workpiece is the:

A. Turret

B. Tailstock

C. Chuck

D. Tool post

4. The turret in a CNC lathe is primarily used for:

A. Supporting the tailstock

B. Holding and indexing multiple tools

C. Measuring workpiece dimensions

"Be Ready to Learn. You will Learn to Achieve"
RLA ACADEMY
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB

D. Cooling the cutting area

5. Which chuck is known for self-centering capabilities in CNC lathes?

A. Four-jaw independent chuck

B. Magnetic chuck

C. Three-jaw universal chuck

D. Collet chuck

6. For holding irregularly shaped workpieces, the most suitable chuck is:

A. Three-jaw chuck

B. Four-jaw independent chuck

UNIT 05 CNC Turning

ANSWERS & EXPLANTION

1. In CNC turning, the primary function of the CNC controller is to:

A. Control the spindle speed only

B. Manage tool changes manually

C. Interpret and execute part programs

D. Operate the coolant system exclusively

Answer: C

Explanation: The CNC controller reads and interprets the part program (G-code) and controls all machine functions, including spindle speed, feed rate, and tool movements.

2. Which of the following is a key advantage of CNC machines over manual machines?

A. Higher power consumption

B. Increased operator intervention

C. Enhanced precision and repeatability

D. Limited to simple operations

Answer: C

Explanation: CNC machines offer superior precision and repeatability due to automated control, reducing human error.

3. In a CNC turning center, the component responsible for holding and rotating the workpiece is the:

A. Turret

B. Tailstock

C. Chuck

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC TNMAWS SSC RRB TRB
RLA ACADEMY

D. Tool post

Answer: C

Explanation: The chuck grips and rotates the workpiece, allowing cutting tools to shape it as needed.

4. The turret in a CNC lathe is primarily used for:

A. Supporting the tailstock

B. Holding and indexing multiple tools

C. Measuring workpiece dimensions

D. Cooling the cutting area

Answer: B

UNIT 06 VMC MACHINES

QUESTIONS

01. What is a Vertical Machining Center (VMC)?

A. A lathe with vertical spindle.

B. A CNC machine with horizontal spindle movement.

C. A CNC milling machine where the spindle is vertically oriented.

D. A manual milling machine for vertical cutting.

02. Which device is commonly used to hold flat workpieces in a VMC?

A. Tailstock

B. Live Center

C. Machine Vice

D. Mandrel

03. Match the G-codes to their functions:

1. G00 –

2. G01 –

3. G02 –

4. G03 –

A. Rapid traverse

B. Linear interpolation

C. CW Circular interpolation

D. CCW Circular interpolation

04. If a tool is 150 mm long and tool offset value is +10 mm, what is the tool travel from the reference point when G43 is used?

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

A. 150 mm

B. 140 mm

C. 160 mm

D. 10 mm

05. Which of the following is NOT an advantage of using a Tool Magazin

A. Reduces manual tool change time

B. Allows automatic tool selection

C. Increases tool wear

D. Enhances production speed

Unit 06 VMC Machines

ANSWERS & EXPLANTION

01. What is a Vertical Machining Center (VMC)?

A. A lathe with vertical spindle.

B. A CNC machine with horizontal spindle movement.

C. A CNC milling machine where the spindle is vertically oriented. ✅

D. A manual milling machine for vertical cutting.

Explanation: VMC is a type of CNC milling machine where the spindle is oriented vertically. It's used for precision operations like face milling, contouring, slotting, and drilling

02. Which device is commonly used to hold flat workpieces in a VMC?

A. Tailstock

B. Live Center

C. Machine Vice ✅

D. Mandrel

Explanation: A machine vice securely clamps flat or rectangular workpieces during VMC operations. Tailstock/live centers are used in turning operations, and mandrels are used for internal gripping in lathes.

03. Match the G-codes to their functions:

1. G00 –

2. G01 –

3. G02 –

4. G03 –

A. Rapid traverse

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC TNMAWS SSC RRB TRB
RLA ACADEMY

B. Linear interpolation

C. CW Circular interpolation

D. CCW Circular interpolation

Correct Match:

1-A, 2-B, 3-C, 4-D ✅

Explanation:

G00 = Rapid move

G01 = Linear feed

G02 = Clockwise circular move

G03 = Counter-clockwise circular move

UNIT 07 ROUTINE MAINTENANCE AND TROUBLE SHOOTING OF CNC LATHE & VMC

ANSWERS & EXPLANTION

01. Which of the following is the primary goal of preventive maintenance in CNC machines?

A) Reduce operator fatigue

B) Increase spindle RPM

C) Avoid unexpected breakdowns

D) Enhance tool wear

02. What is the ideal frequency to check lubrication levels in CNC lathes?

A) Once a month

B) Once a week

C) Every 6 months

D) Daily

03. A CNC VMC machine shows spindle overheating frequently. What is the most probable cause?

A) Loose chuck

B) High feedrate

C) Faulty spindle cooling system

D) Excessive tool offset

04. What M-code is typically used to stop the spindle?

A) M05

B) M30

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
RLA ACADEMY
TNPSC
TNMAWS
SSC
RRB
TRB

C) M03

D) M08

05. Which tool is used to check backlash in ball screw systems?

A) Dial test indicator

B) Vernier caliper

C) Torque wrench

D) Feeler gauge

06. What is the recommended action when a CNC machine trips due to axis overtravel?

UNIT 07 ROUTINE MAINTENANCE AND TROUBLE SHOOTING OF CNC LATHE & VMC

ANSWERS & EXPLANTION

01. Which of the following is the primary goal of preventive maintenance in CNC machines?

A) Reduce operator fatigue

B) Increase spindle RPM

C) Avoid unexpected breakdowns

D) Enhance tool wear

Answer: C) Avoid unexpected breakdowns

Explanation: Preventive maintenance helps identify and resolve issues before failure occurs, ensuring smooth and uninterrupted machine operation.

02. What is the ideal frequency to check lubrication levels in CNC lathes?

A) Once a month

B) Once a week

C) Every 6 months

D) Daily

Answer: D) Daily

Explanation: Lubrication oil levels must be checked daily to prevent spindle damage and ensure machine health.

03. A CNC VMC machine shows spindle overheating frequently. What is the most probable cause?

A) Loose chuck

B) High feedrate

"Be Ready to Learn. You will Learn to Achieve"
RLA ACADEMY
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC TNMAWS SSC RRB TRB

C) Faulty spindle cooling system

D) Excessive tool offset

Answer: C) Faulty spindle cooling system

Explanation: An ineffective or failed cooling unit can't regulate the spindle temperature, leading to overheating.

04. What M-code is typically used to stop the spindle?

A) M05

B) M30

C) M03

D) M08

UNIT 08 VMC G CODE AND M CODE PROGRAMMING

QUESTIONS

01. In CNC programming, which G-code is used for rapid positioning?

A. G01

B. G02

C. G03

D. G00

02. Which M-code is used to stop the spindle in CNC machining?

A. M03

B. M04

C. M05

D. M08

03. What does G90 signify in CNC programming?

A. Incremental programming

B. Absolute programming

C. Circular interpolation

D. Dwell

04. Which G-code is used for circular interpolation in a clockwise direction?

A. G00

B. G01

C. G02

D. G03

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

05. In CNC programming, what is the function of M08?

A. Spindle stop

B. Coolant ON

C. Program end

D. Tool change

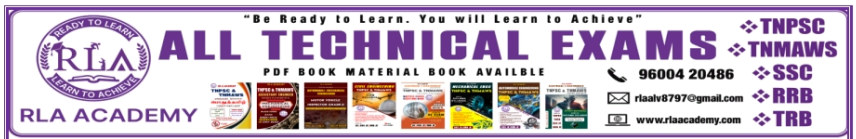
06. Which G-code is used to cancel cutter radius compensation?

A. G41

B. G42

C. G40

D. G43



UNIT 08 VMC G CODE AND M CODE PROGRAMMING

ANSWERS & EXPLANATION

01. In CNC programming, which G-code is used for rapid positioning?

A. G01

B. G02

C. G03

D. G00 ✅

Explanation:

G00 is used for rapid traverse, moving the tool quickly to a specified location without cutting.

02. Which M-code is used to stop the spindle in CNC machining?

A. M03

B. M04

C. M05 ✅

D. M08

Explanation:

M05 stops the spindle rotation, regardless of its current direction.

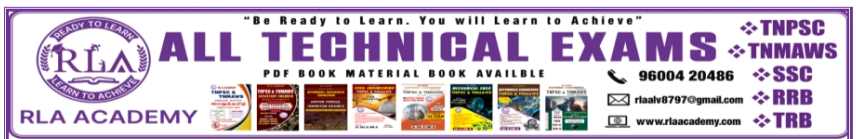
03. What does G90 signify in CNC programming?

A. Incremental programming

B. Absolute programming ✅

C. Circular interpolation

D. Dwell



Explanation:

G90 sets the machine to interpret coordinates as absolute values from the program's origin point.

04. Which G-code is used for circular interpolation in a clockwise directi

A. G00

B. G01

C. G02 ✅

D. G03

Explanation:

G02 commands the machine to move the tool in a clockwise circular path.

UNIT 09 COMPUTER AIDED MACHINING

QUESTIONS

01. In Computer Aided Manufacturing (CAM), which coordinate system is primarily used for defining 3D solid models?

A) Polar Coordinate System

B) Cylindrical Coordinate System

C) Cartesian Coordinate System

D) Spherical Coordinate System

02. Which of the following is a primary advantage of using CAM software in machining complex parts?

A) Manual calculation of tool paths

B) Increased reliance on operator skill

C) Automated generation of optimized tool paths

D) Elimination of the need for CNC machines

03. In surface modeling, what distinguishes a B-spline surface from a Bezier surface?

A) B-spline surfaces are limited to planar geometries

B) Bezier surfaces offer more control points than B-splines

C) B-spline surfaces provide greater flexibility and local control

D) Bezier surfaces can represent complex free-form shapes

04. What is the primary purpose of tool path verification in CNC machining?

A) To increase machine speed

B) To ensure the tool path avoids collisions and errors

C) To manually adjust tool positions

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
RLA ACADEMY
TNPSC
TNMAWS
SSC
RRB
TRB

D) To reduce the need for simulation

05. Which file format is commonly used to export NC programs from CAM software?

A) .docx

B) .pdf

C) .nc

D) .xls

06. In CAM software, what does the term "post-processing" refer to?

A) Editing the 3D model after machining

UNIT 09 COMPUTER AIDED MACHINING

ANSWERS & EXPLANATION

01. In Computer Aided Manufacturing (CAM), which coordinate system is primarily used for defining 3D solid models?

A) Polar Coordinate System

B) Cylindrical Coordinate System

C) Cartesian Coordinate System ✅

D) Spherical Coordinate System

Explanation:

The Cartesian Coordinate System, defined by X, Y, and Z axes, is the standard for 3D modeling in CAM due to its straightforward representation of spatial dimensions.

02. Which of the following is a primary advantage of using CAM software in machining complex parts?

A) Manual calculation of tool paths

B) Increased reliance on operator skill

C) Automated generation of optimized tool paths ✅

D) Elimination of the need for CNC machines

Explanation:

CAM software automates the creation of efficient tool paths, reducing manual intervention and improving machining accuracy.

03. In surface modeling, what distinguishes a B-spline surface from a Bezier surface?

A) B-spline surfaces are limited to planar geometries

B) Bezier surfaces offer more control points than B-splines

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
RLA ACADEMY
TNPSC
TNMAWS
SSC
RRB
TRB

C) B-spline surfaces provide greater flexibility and local control ✅

D) Bezier surfaces can represent complex free-form shapes

Explanation:

B-spline surfaces allow for local control and flexibility, making them suitable for complex geometries in CAM applications.

04. What is the primary purpose of tool path verification in CNC machini

A) To increase machine speed

B) To ensure the tool path avoids collisions and errors ✅

C) To manually adjust tool position

D) To reduce the need for simulation

UNIT 10 4TH AXIS ON VMC

QUESTIONS

01. What does the term "4th axis" refer to in a VMC machine?

A) Movement along Z-axis

B) Spindle speed control

C) Rotary motion around X-axis

D) Tool length compensation

02. Which axis is typically referred to as the auxiliary axis in a 4-axis VMC?

A) Z-axis

B) A-axis

C) C-axis

D) W-axis

03. What is the main purpose of an indexer in 4th axis machining?

A) Holding the tool

B) Providing spindle cooling

C) Rotating the part to a fixed angle

D) Tool offset adjustment

04. What is the benefit of continuous 4-axis machining over step-wise indexing?

A) Slower machining

B) Reduced power consumption

C) Complex contours can be machined

D) Easier programming

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC
TNMAWS
SSC
RRB
TRB
RLA ACADEMY

05. How is the 4th axis (rotary table) typically referenced on a VMC?

A) With a G54 work offset

B) Manual handwheel

C) Using homing procedure or zero return

D) Through spindle orientation

06. Which G-code enables linear movement with rotation on the 4th axis?

A) G00

B) G28

C) G01

D) G04

UNIT 10 4TH AXIS ON VMC

ANSWERS & EXPLANATION

01. What does the term "4th axis" refer to in a VMC machine?

A) Movement along Z-axis

B) Spindle speed control

C) Rotary motion around X-axis

D) Tool length compensation

Answer: C

Explanation: The 4th axis in a VMC is typically the A-axis, which refers to rotation around the X-axis. It enables indexing or continuous rotary machining.

02. Which axis is typically referred to as the auxiliary axis in a 4-axis VMC?

A) Z-axis

B) A-axis

C) C-axis

D) W-axis

Answer: B

Explanation: The A-axis is the auxiliary rotary axis added to the 3-axis VMC to enable 4-axis machining.

03. What is the main purpose of an indexer in 4th axis machining?

A) Holding the tool

B) Providing spindle cooling

C) Rotating the part to a fixed angle

D) Tool offset adjustment

Answer: C

"Be Ready to Learn. You will Learn to Achieve"
ALL TECHNICAL EXAMS
PDF BOOK MATERIAL BOOK AVAILBLE
96004 20486
rlaalv8797@gmail.com
www.rlaacademy.com
TNPSC TNMAWS SSC RRB TRB
RLA ACADEMY

Explanation: An indexer positions the workpiece at predetermined angles to allow multi-face machining without manual repositioning.

04. What is the benefit of continuous 4-axis machining over step-wise indexing?

A) Slower machining

B) Reduced power consumption

C) Complex contours can be machined

D) Easier programming

Answer: C

Explanation: Continuous 4-axis machining enables synchronous rotation, allowing complex surfaces like impellers or helices to be produced.