THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321] MARCH 2021 Sub. Code: 2471

(AUGUST 2020 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS

THIRD YEAR (Regulation 2017-2018)

PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION

Q.P. Code : 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Orthographic projection and Isometric projection.
2. Computer Operating System.
3. Computer Numeric Control (CNC).

II. Write notes on: **(8 x 5 = 40)**

1. Central Processing Unit (CPU).
2. Email and Internet.
3. Functions of Word and Power Point software.
4. A point "**A**" lies on HP and 20mm in front of VP, Draw its projections.
5. A line "**AB**" of Length 50mm lies 20 mm in-front of VP and 20 mm above HP, Draw its projections.
6. Automation and its Application.
7. Steps to enter text in AutoCAD software.
8. Steps involved in fabrication of socket using CAD / CAM technique.

III. Short answers on: **(10 x 3 = 30)**

1. Steps to add new slides in MS-PowerPoint.
2. Define: Networking.
3. List different generation of computers?
4. Computer viruses.
5. List few input and Output devices.
6. Uses of Compact Disk (CD).
7. Application of Spread sheets.
8. Steps to draw a circle in AutoCAD.
9. Steps to use Mirror command.
10. Advantages of CNC Machines.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0222] **FEBRUARY 2022** **Sub. Code: 2471**
(AUGUST 2021 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS
THIRD YEAR (Regulation 2017-2018)
PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION
Q.P. Code : 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Outline the applications of computers in a Prosthetics & Orthotics Clinic.
2. Describe methods of dimensioning and tolerancing.
3. Discuss the computer memories and secondary storage devices.

II. Write notes on: **(8 x 5 = 40)**

1. What is the difference between input and output devices? Explain with suitable examples
2. What is modifier key? Explain with suitable examples. What are the functions of modifier keys?
3. What is output device? Explain different types of Monitors.
4. What is CAD? Explain Product cycle using CAD/CAM with neat diagram.
5. What is automation? Explain its importance in Prosthetics & Orthotics industry
6. Distinguish between Orthographic and isometric projection

7. Match the following :

Group A	***Group B***
i) Ellipse	a) three equal sides
ii) Parabola	b) two equal sides
iii) Hyperbola	c) unequal sides
iv) Equilateral triangle	d) eccentricity one
v) Isosceles triangle	e) eccentricity 2/3
	f) eccentricity 3/2

8. Define network. Explain the types and uses.

III. Short answers on: **(10 x 3 = 30)**

1. What is resolution? What does it indicate?
2. What is special purpose key?
3. Define CAM? Compare it with Conventional Machining.
4. What are the advantages of CNC machines?
5. What is the difference between Impact and Non-impact Printer?
6. Linear tolerance
7. Define plane / Lamina.
8. Draw conventional representation of the following
    i) Wood
    ii) Fillet
    iii) Lap joint
9. Sketch the convention of a round section?
10. 3-D Printing

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423] **APRIL 2023** **Sub. Code: 2471**

BACHELOR IN PROSTHETICS AND ORTHOTICS
THIRD YEAR (Regulation 2017-2018 onwards)
PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION
Q.P. Code : 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. What are the various communication devices that are used to transmit information from one network to another? Explain each.
2. How Orthographic and isometric projections of P and O components are useful in fabrication procedures?
3. Explain any three 2D commands.

II. Write notes on: **(8 x 5 = 40)**

1. Spreadsheet
2. Explain various file formats.
3. Explain the classification of computers. What are the characteristics of computer that differentiate it from all other electronic devices?
4. What is computer graphics? Explain its uses and advantages.
5. Explain with simple sketch and syntax of Modify commands in 2D.
6. Why are domain names required? What is the relationship between domain names and I.P addresses?
7. What is the difference between a quadrilateral and a polygon?
8. What is an auxiliary view?

III. Short answers on: **(10 x 3 = 30)**

1. Annotation.
2. Plotting.
3. Binary Numbers.
4. List the draw commands in 2D Auto CAD.
5. Differentiate the “copy” and “move” command in 2D.
6. State the function of CAD system.
7. Types of Lines.
8. Drawing Instruments.
9. Chamfering.
10. DOS.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123] **NOVEMBER 2023** **Sub. Code: 2471**

BACHELOR IN PROSTHETICS AND ORTHOTICS
THIRD YEAR (Regulation 2017-2018 onwards)
PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION
Q.P. Code: 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. First angle projection and Third Angle projection system.
2. Parts of computer and its function.
3. CAD / CAM application in the field of Prosthetics and Orthotics.

II. Write notes on: **(8 x 5 = 40)**

1. Random Access Memory and Read only Memory.
2. Drum printer.
3. LAN and WAN.
4. List the steps involved to draw a Line and a Circle in AutoCAD.
5. List any 5 DOS commands & explain each of them briefly.
6. What is Power Point? Explain briefly its features.
7. What are the advantages and disadvantages of CNC Machines?
8. Explain difference between Extend and Trim Command in AutoCAD.

III. Short answers on: **(10 x 3 = 30)**

1. Input Devices.
2. Types of Dimensioning.
3. Various Data Storage devices.
4. Types of Computers.
5. Different Operating System.
6. Product Cycle.
7. List functions of Graphic Package.
8. Network, E-mail and Internet.
9. Use of Array Command in AutoCAD.
10. Use of Cut, Copy and Paste command.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0424] **APRIL 2024** **Sub. Code: 2471**

BACHELOR IN PROSTHETICS AND ORTHOTICS
THIRD YEAR (Regulation 2017-2018 onwards)
PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION
Q.P. Code: 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. What is an Operating System? Describe the service provided by Operating System.
2. Explain about the "Product Cycle" with neat flowchart.
3. Explain about CNC machine and its application in Prosthetics and Orthotics.

II. Write notes on: **(8 x 5 = 40)**

1. Enumerate the general rules of dimensioning.
2. Define Tolerance, Limit and Fit.
3. Explain the various graphic display devices.
4. Describe different ways for creating presentation using MS-Power Point.
5. System software.
6. State the functions of AutoCAD.
7. CAD-CAM system in Prosthetics.
8. Explain with diagram microcomputer hardware system unit.

III. Short answers on: **(10 x 3 = 30)**

1. Define Graphical Communication. Write its applications in Prosthetics and Orthotics.
2. What is French curve? Write its uses.
3. Construct an isometric scale.
4. What is a scale?
5. What is the Representative Fraction (R.F.) or Scale Factor (S.F.)?
6. What are the standard sizes of drawing sheets according to I.S.I. and which is suitable for drawing work?
7. Difference between RAM and ROM.
8. List out the operating system functions.
9. Explain the peripherals of computer system.
10. Differentiate application software and system software with two examples for each.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1125] **NOVEMBER 2025** **Sub. Code: 2471**

BACHELOR IN PROSTHETICS AND ORTHOTICS
THIRD YEAR (Regulation 2017-2018 onwards)
PAPER I – COMPUTER SCIENCE AND GRAPHICAL COMMUNICATION
Q.P. Code: 802471

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Explain types of Network and Network topology.
2. Major part of Compute Numerically Controlled (CNC) and History of CNC.
3. Methods of Dimension and Tolerancing.

II. Write notes on: **(8 x 5 = 40)**

1. Steps involved in fabrication of socket using CAD / CAM technique.
2. Advantages and Disadvantage of CNC Machines.
3. Specification of peripherals and computer system.
4. A Point "PQ" lies on HP and 40mm in front of VP, Draw its projections.
5. Steps to enter text in AutoCAD software.
6. Central Processing Unit (CPU).
7. Automation and its Application.
8. A line "RS" of length 60mm lies 30 mm in-front of VP and 20 mm above HP, Draw its projections.

III. Short answers on: **(10 x 3 = 30)**

1. What are examples of personal computers?
2. Define Auto Lisp.
3. Email and Internet.
4. Application of Computer Aided Design and Manufacturing.
5. What is a Computer Numerically Controlled (CNC) Carver?
6. Uses of Compact Disk (CD).
7. Application of Spread sheets.
8. Steps to draw a circle in AutoCAD.
9. Steps to use Mirror command.
10. List different generation of computers.

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