BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Manufacturing Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, V Semester,

2nd In-Sem. Examination

Course Code: SMS1502 **Time: 1 Hour**

Course Name: Integrated CAD-CAM-CNC **Max. Marks: 20**

Instructions:

1. Attempt all questions.
2. Use of Calculators is Prohibited.
3. Section A contains 05 Questions. Each question carries 1 Mark.
4. Section B contains 03 Questions. Each question carries 2 Marks.
5. Section C contains 03 Questions. Each question carries 3 Marks.

Section – A

05X01 = 05 Marks

1. Which among the following was the first CAD software in the world (still in use)?
   a) AutoCAD
   b) AutoCAD
   c) Solidworks
   d) CATIA
2. MasterCAM has been developed by which of the following company?
   a) CNC Software Inc.
   b) Dassault
   c) Autodesk
   d) None of the above
3. Modern CAD systems works on:
   a) GUI
   b) BCD
   c) ICG
   d) None of the above
4. Which of the following is not the manual ISO coding platform?
   a) Fanuc
   b) Siemens
   c) Heldienhien
   d) None of the above
5. Which one is an Input device?
   a) Display Unit
   b) Punch Tape Reader
   c) Both
   d) None

Section – B

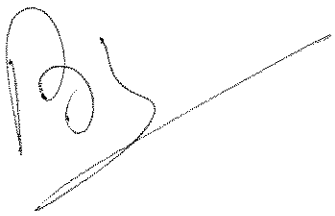
03X02 = 06 Marks

6. Write down the Full form of AutoCAD and the year in which it was released by Autodesk?
7. Mention the name of any two programming languages which are popularly used as a CAE tool?
8. Write down the full form of CAPP and name the software which are used to achieve this in industry?

Section – C

03X03 = 09 Marks

9. Differentiate between drafting and modelling software with suitable examples.
10. Describe, how are In-built CAM software's are different from Standalone CAM software?
11. Describe different types of CAM software with one example each.



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Course Name: Integrated CAD-CAM-CNC **Max. Marks: 20**

Answer Key

Section – A

05X01 = 05 Marks

1. Which among the following was the first CAD software in the world (still in use)?
   a) **AutoCAD**
2. MasterCAM has been developed by which of the following company?
   b) **Dassault**
3. Modern CAD systems works on:
   c) **ICG**
4. Which of the following is not the manual ISO coding platform?
   d) **None of the above**
5. Which one is an Input device?
   b) **Punch Tape Reader**

Section – B

03X02 = 06 Marks

6. Write down the Full form of AutoCAD and the year in which it was released by Autodesk?

Ans. Automate Computer Aided Design, 1982

7. Mention the name of any two programming languages which are popularly used as a CAE tool?

Ans. Python and MATLAB

8. Write down the full form of CAPP and name the software's which are used to achieve this in industry?

Ans: Computer Aided Process Planning, Microsoft Excel, Dassault 3D experience platform.

Section – C

03X03 = 09 Marks

9. Differentiate between drafting and modelling software's with suitable examples.

   Ans. Drafting software's are primarily used for creating 2D drawings while Modelling Software's are used for modelling purpose i.e. for creating 3D models of physical Objects for e.g.: AutoCAD is drafting while Solidworks is modelling software.

10. Describe, how are In-built CAM software's are different from Standalone CAM software?

Ans. e.g: MAZATROL, STAR software, Siemens controller

11. Describe different types of CAM software's with one example each?
    1. standalone software: software which is not built for a particular type of CNC machine, they support ISO programming (G, M codes) e.g. MasterCAM
    2. in built software: these are inbuilt and attached with their CNC machines

e.g: MAZATROL, STAR software, Siemens controller

3. integrated software: these CAM softwares are tightly attached with their PLM
   e.g.: NX cam and CATIA cam

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Session: 2021-22 (Summer Semester)

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2nd In-Sem. Examination

Course Code: SMS1504 **Time: 1 Hour**

Course Name: Project Work **Max. Marks: 20**

Instruction:

1. Attempt all questions.
2. Use of Calculators is Prohibited.
3. Section A contains 05 Questions. Each question carries 1 Mark.
4. Section B contains 03 Questions. Each question carries 2 Marks.
5. Section C contains 03 Questions. Each question carries 3 Marks.

Section – A

05X01 = 05 Marks

1. Assembling project team and assigning their responsibilities are done during which phase of a project management?
   a) Initiation
   b) Planning
   c) Execution
   d) Closure
2. The basic nature of a project is a _____ one.
   a) Permanent
   b) temporary
   c) (a) or (b)
   d) Both (a) and (b)
3. How the project work will be carried out, monitored, and controlled? These questions are answered in which phase of the project management?
   a) Initiating
   b) Planning
   c) Executing
   d) Closing
4. Which of the following is NOT a part of project management?
   a) Initiating
   b) monitoring
   c) closing

d) All above are parts

5. The review of the successes and the mistakes is normally held during _____ phase.
   a) Initiation
   b) Planning
   c) Execution
   d) Closure

Section – B

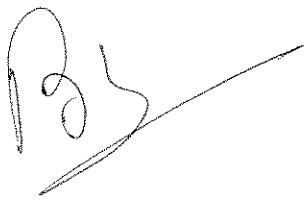
03X02 = 06 Marks

6. What do you understand by the term "project"?
7. Write Advantages of project management.
8. Write a short note on mass production.

Section – C

03X03 = 09 Marks

9. Define the SMART Acronym.
10. Explain Project Phases Lifecycle with diagram.
11. Explain the five project phases in proper sequence also draw layout diagram to support this.



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B. Voc. Program, V Semester,

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Course Code: SMS1504 **Time: 1 Hour**

Course Name: Project work **Max. Marks: 20**

Answer Key

Section – A

1. Assembling project team and assigning their responsibilities are done during which phase of a project management?
   a) Initiation
2. The basic nature of a project is a _____ one.
   b) temporary
3. How the project work will be carried out, monitored, and controlled? These questions are answered in which phase of the project management?
   b) Planning
4. Which of the following is NOT a part of project management?
   d) All above are parts
5. The review of the successes and the mistakes is normally held during _____ phase.
   d) Closure

Section – B

6. What do you understand by the term "project"?
   - A project is defined as a "**temporary endeavor** with a **beginning and an end** and it must be used to create a **unique product, service or result**".
   - Projects are undertakings that are characterized essentially by the **uniqueness** of the **conditions that affect it as a whole.**

7. Write Advantages of project management?

The following advantages speak for the application of project management in the process of solving complex tasks:

- Good integration of different specialists and thus different competencies in mixed project teams,
- Achieving greater creativity and innovativeness in the problem-solving process,
- Achieve better responsiveness to changing customer needs (compared to line organization),
- Optimal use of available resources to solve problems,
- Achieving a better identification with the objectives for complex projects and so on.

8. Write a short note on mass production.
   - Mass production is the manufacturing of large quantities of standardized products, often using assembly lines or automation technology. Mass production facilitates the efficient production of a large number of similar products.
   - Mass production is also referred to as flow production, repetitive flow production, series production, or serial production.

9. Define the SMART Acronym.

SMART is a acronym to guide in the setting of objectives and goals in project management.

S	*Specific*	– target a specific area for improvement.
M	*Measurable*	– quantify or at least suggest an indicator of progress.
A	*Achievable*	– specify who will do it.
R	*Realistic*–	state what results can realistically be achieved, given available resources.
T	*Time-related*	– specify when the result(s) can be achieved.

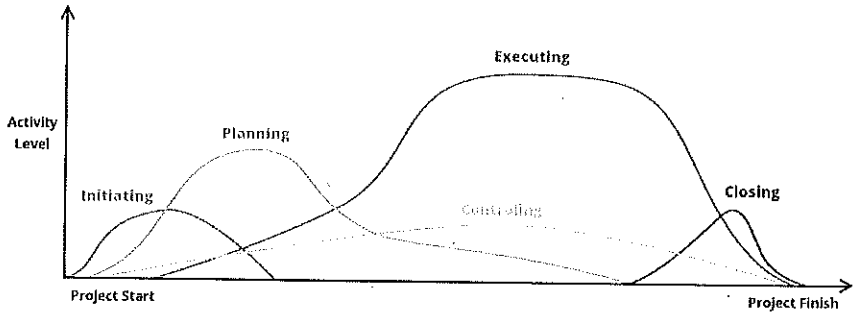
10. Explain project Phases Lifecycle with diagram.

Typical tasks of Project Management:

- Conception & Initiation
- Definition & Planning
- ***Performance & Control***
- ***Project Close***

Typical tasks of Project Execution (work):

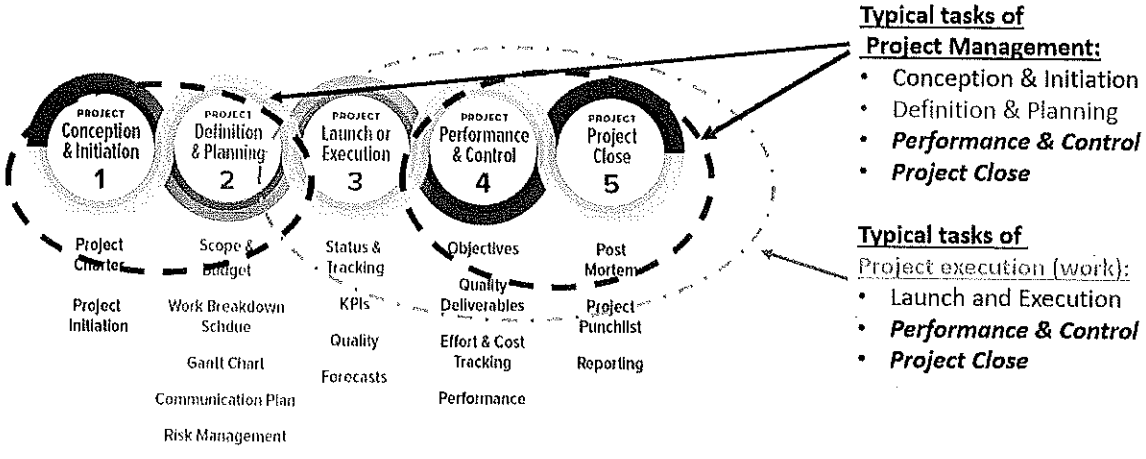
- Launch and Execution
- ***Performance & Control***
- ***Project***



How processes overlap on a project
Planning is the most important at the start of a project. Then, executing takes over. Controlling is important throughout the entire project.

11. Explain the five project phases in proper sequence also draw layout diagram to support this.

Project Phases:



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School of Manufacturing Skills

Session: 2021-22 (Summer Semester)

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Course Code: SMS1505 **Time: 1 Hour**

Course Name: Quality Management **Max. Marks: 20**

Instruction:

1. Attempt all questions.
2. Section A contains 5 Questions. Each question carries 1 Marks.
3. Section B contains 3 Questions. Each question carries 2 Marks.
4. Section C contains 3 Questions. Each question carries 3 Marks.

Section – A

05X01 = 05 Marks

1. Lean manufacturing focuses on.
   A. Mass production
   B. Batch production
   C. Waste elimination
   D. None of the above.

2. Which charts are used for variable data?
   A. X bar chart & R chart
   B. P chart & C chart
   C. Np chart & U chart
   D. None of above.

3. _____ is not among the lean tools.
   A. JIT
   B. Histogram
   C. KANBAN
   D. JIDOKA

4. A six sigma process has defect level below _____ defects per million opportunities.
   A. 4.3
   B. 3.4
   C. 3.2
   D. 2.4

5. Process capability index is denoted by.
   A. A_P
   B. C_P
   C. A_{PK}
   D. C_{PK}

Section – B

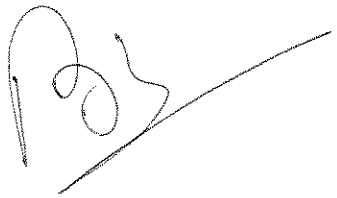
03X02 = 06 Marks

6. What does MURA means?
7. Write one differences between variables and attributes.
8. Define TAKT time.

Section – C

03X03 = 09 Marks

9. Write down the X bar chart limit formulas and define all the character used in formula?
10. What are C_P and C_{PK}? Write down the formula used to calculate both.
11. What is the principle of lean manufacturing?



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Course Code: SMS1505 **Time: 1 Hour**

Course Name: Quality Management **Max. Marks: 20**

Answer Key

Section – A

05X01 = 05 Marks

1. Lean manufacturing focuses on.

   C. waste elimination

2. Which charts are used for variable data?

   A. X bar chart & R chart

3. _____ is not among lean tools.

   B. Histogram

4. A six sigma process has defect level below _____ defects per million opportunities.

   B. 3.4

5. Process capability index is denoted by.

   D. C_{PK}

Section – B

03X02 = 06 Marks

6. What does MURA means?
   Ans.
   The second "M" is for **MURA,** or inconsistency.

7. Write one differences between variable and attributes.
   Ans.

Sr. No.	Variable	Attribute
1	Characteristics that can take any real value	Defect-related characteristics
2	May be in whole or in fractional numbers	Classify products as either good or bad or count defects
3	Continuous random variables	Categorical or discrete random variables

8. Define TAKT time.
Ans. It's the maximum amount of time a product needs to be produced while still meeting consumer demand.

Section – C

03X03 = 09 Marks

9. Write down the X bar chart limit formulas and define all the character used in formula?
Ans.

$$\textit{Upper control limit (UCL)} = \bar{\bar{x}} + A_2\bar{R}$$

$$\textit{Lower control limit (LCL)} = \bar{\bar{x}} - A_2\bar{R}$$

where $\bar{R}$ = *average range of the samples*
A_2 = *control chart factor found in Table S6.1*
$\bar{\bar{x}}$ = *mean of the sample means*

10. What are C_P and C_{PK}? Write down the formula used to calculate both.
Ans.

$$C_p = \frac{\textit{Upper Specification - Lower Specification}}{6\sigma}$$

$$C_{pk} = \textit{minimum of}\left[\frac{\textit{Upper Specification Limit} - \bar{\bar{x}}}{3\sigma}\right], \left[\frac{\bar{\bar{x}} - \textit{Lower Specification Limit}}{3\sigma}\right]$$

11. What is the principle of lean manufacturing?

Ans.

1. **Value** (from the customer's perspective)
2. **Value Stream** (map the steps in the value stream)
3. **Flow** (create a smooth flow)
4. **Pull** (the right amount pulled at the right time, no more, no less)
5. **Perfection** (elimination of all waste in the value stream)