



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

SET-A

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1501

Course Name: Production Management

Time: 2 Hour

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Work Study can be applied in
 - a) Automotive industry
 - b) Hospital
 - c) Tourism
 - d) Every where
2. Application of Ergonomics are in
 - a) Aerospace
 - b) Product design
 - c) Health care
 - d) All three
3. In Method Study, Transport is represented by
 - a) O
 - b) Arrow
 - c) Square
 - d) Inverted Triangle
4. In Production System, inputs are
 - a) Materials
 - b) Road
 - c) Transport
 - d) None of the above
5. Direct Cost in a Manufacturing Industry includes:
 - a) Only direct labour cost
 - b) Only direct material cost
 - c) Summation of direct material and labour cost
 - d) None



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6. Prime Cost in a Manufacturing Industry includes:
- All direct cost
 - Factory overhead cost
 - Summation of direct and factory overhead cost
 - None
7. JIT concept is used for:
- Material purchase
 - Inventory control
 - Planning
 - None
8. Under ABC analysis, quantity of class-A product is
- 70 – 80 %
 - 15 – 20 %
 - 5 – 10 %
 - None of the above
9. Benefits of Process Planning are
- Reduction in setup costs
 - Reduction in tooling costs
 - Reduction in material costs
 - All
10. Number of product under "Job Production System" are
- Less
 - More
 - In between
 - Nil

Section – B

04X04 = 16 Marks

11. Yesterday, the price of envelopes was \$3 a box and Ram was willing to buy 10 boxes. Today, the price has gone up to \$3.75 a box and Ram is now willing to buy 8 boxes. Is Ram's demand for elastic or inelastic. What is Ram's elasticity of demand?
12. Discuss about various types of production systems!
13. Write down the comparison between Conventional and JIT attitudes!
14. A department store has found that in a four-month period, the best forecast is derived by using 40% of the actual sales for the most recent month, 30% of the two months ago, 20% of three months ago and 10% of four months ago. Find out the forecast for the 5th month, if the actual sales for the 4 month is:

Month	1	2	3	4	5
Sales in nos.	100	90	105	95	----



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Section – C

04X06 = 24 Marks

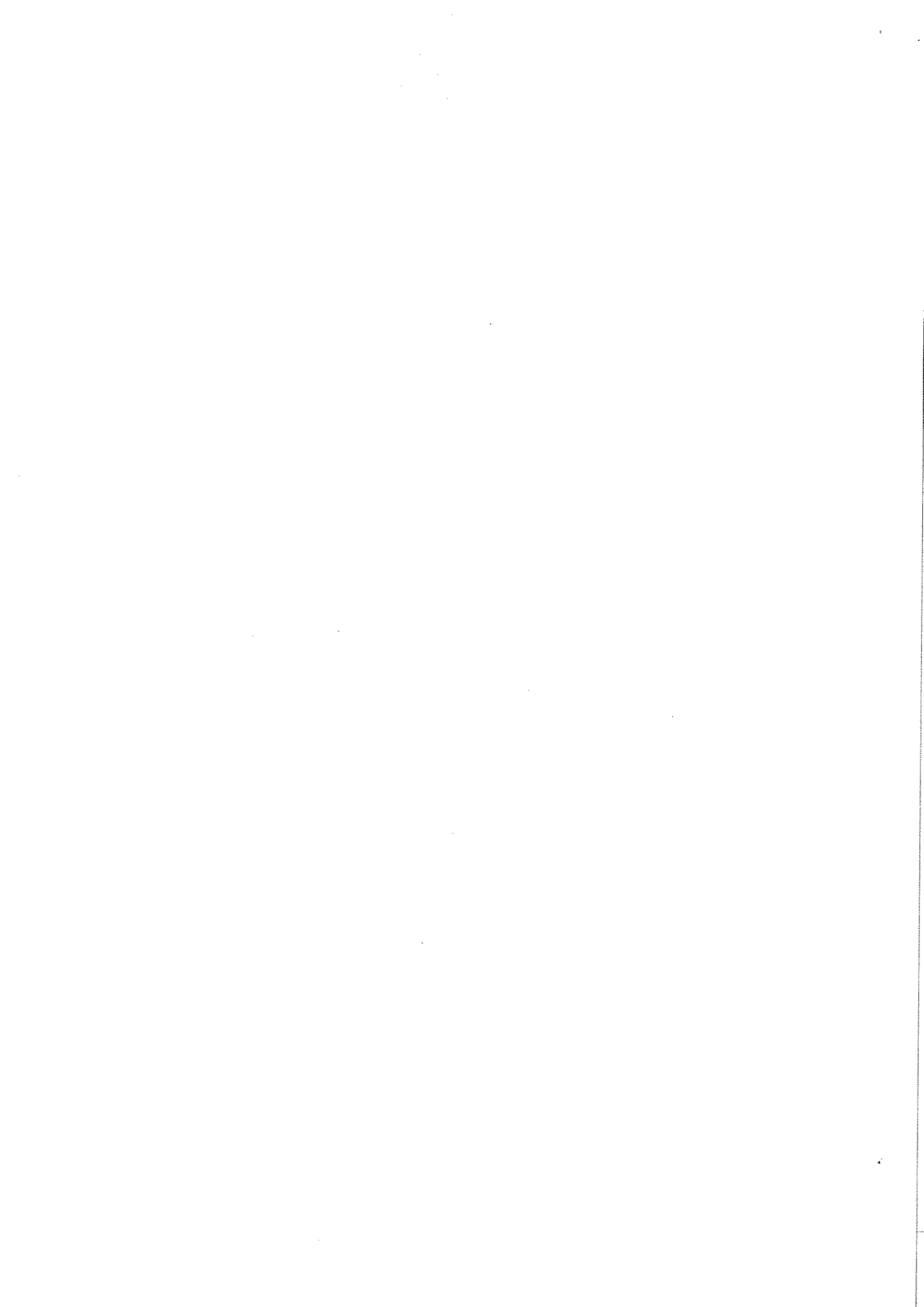
15. Describe the steps for doing a method study of job process. Illustrate one of the recording techniques used in the method improvement with a case example.
16. A medium scale industry incurs the following costs for their products annually. The production volume on an average is 12000 a year.
- | | |
|---|------------|
| a. Raw material cost including losses due to scrap and wastage (due to rejection) | = Rs.50000 |
| b. Tool cost | = Rs.4000 |
| c. Wages to skilled hands engaged on production | = Rs.20000 |
| d. Wages to foremen, other supervisory staff | = Rs.40000 |
| e. Expenses of office staff (salary, bonus etc.) | = Rs.12000 |
| f. Expenses on sales and distribution agencies | = Rs.8000 |
| g. Expenses on insurance, lighting etc. | = Rs.4000 |

Find direct cost as percentage of total cost.

17. Explain in detail the "ABC Analysis" of inventory control?
18. Explain in detail the "Kanban System" of production control?

BKS

BKS





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SET-B

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1501

Course Name: Production Management

Time: 2 Hour

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Loading in Production System means
 - a) Where it shall be done
 - b) When it shall be done
 - c) Who will do the work
 - d) None of the above
2. Scheduling in Production System means
 - a) Where it shall be done
 - b) When it shall be done
 - c) Who will do the work
 - d) None of the above
3. MRP means
 - a) Material Resource Planning
 - b) Mean Resource Planning
 - c) Machine Resource Planning
 - d) All
4. Prime Cost in a Manufacturing Industry includes:
 - a) All direct cost
 - b) Factory overhead cost
 - c) Summation of direct and factory overhead cost
 - d) none
5. Under M-T-M, the motion REACH is represented by
 - a) M
 - b) T&P
 - c) P
 - d) R



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6. Under M-T-M, the motion POSITION is represented by
- M
 - T&P
 - P
 - R
7. The benefits of Method Study is
- Removes Non Value Activities
 - Adds Non Value Activities
 - Both of the above
 - None of the above
8. Ergonomics is related
- Well-being of employees
 - Benefits of industry
 - Benefits of Government
 - None of the above
9. Application of Ergonomics are in
- Aerospace
 - Product design
 - Health care
 - All three
10. Ergo of Ergonomics word means
- Natural laws
 - Work
 - Both
 - None

Section – B

04X04 = 16 Marks

11. An operator manufactures 50 jobs in 6 hours and 30 minutes. If this time includes the time for setting his machine. Calculate the operator's efficiency. Standard time allowed for the job was:
- | | | |
|---------------------------|---|------------|
| Setting time | = | 35 minutes |
| Production time per piece | = | 8 minutes |
12. Write down the comparison between Conventional and JIT attitudes in Manufacturing Industry?
13. What do you mean by Macro and Micro Economics? Explain with example?
14. What do you mean by ABC Analysis? Describe the industrial utilization with graph?

Section – C

04X06 = 24 Marks

15. Define Process Planning? Write down the set of instructions included in Process Planning?
16. An industry is producing 100 motorcycle. The various costs involved are given below:
- | | |
|-----------------|--------------|
| Direct labour | : Rs. 50,000 |
| Contract labour | : Rs. 30,000 |
| Material cost | : Rs. 70,000 |
| Coolant cost | : Rs. 10,000 |
| Cutting tool | : Rs. 5,000 |



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Selling overhead : Rs. 10,000

Profit : 10% of total cost

Calculate (1) Prime cost (2) Work cost (3) Cost per unit

17. Define Standard time. Discuss the steps involved in developing Standard Time.

18. What are benefits of breaking the operations into small elements?

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Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1502

Time: 2 Hour

Course Name: Integrated CAD-CAM-CNC

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Which among the following is the correct full form of CAPP?
 - a) Computer Aided Process Planning
 - b) Computer Aided Design
 - c) None of these
 - d) Both of these
2. Which among the following is one of the core programming languages used to write Solidworks?
 - a) Java
 - b) C++
 - c) C#
 - d) All of the above
3. Solidworks has been developed by which of the following company?
 - a) CNC Software Inc.
 - b) Dassault
 - c) AutoDesk
 - d) None of the above
4. _____ is not a stage of PLM
 - a) Design
 - b) Introduction
 - c) Decline
 - d) Growth
5. In a 2D CAD package anti-clockwise circular arc of radius, 5, specified from P1(15,10) to P2(10,15) will have its center at:
 - a) (10,10)
 - b) (15,10)
 - c) (15,15)
 - d) (10,15)



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6. Which among the following is one of the first programming languages to use graphics other than text with a black screen?
 - a) Java
 - b) VBA
 - c) C#
 - d) All of the above
7. Keyboard is a _____ input device
 - a) Graphical
 - b) text
 - c) Numericals
 - d) Both B and C
8. The UCS icon represents the intersection of the _____
 - a) X axis
 - b) Y-axis
 - c) Z-axis
 - d) All of the above
9. Which of the following is the full form for ICG?
 - a) Installed Computer Graphics
 - b) Integrated Computer Graphics
 - c) Integrated Computer Graphs
 - d) Integrated Calculator Graphics
10. CNC drilling machine is considered to be a:
 - a) Point-to-point controlled machine
 - b) Straight line controlled machine
 - c) Continuous line-controlled machine
 - d) Servo-controlled machine

Section – B

04X04 = 16 Marks

11. Write down the full form of CAPP and name the software which is used to achieve this in the industry?
12. Explain how DNC is different from CNC?
13. What do you mean by CNC control system?
14. Explain FEM Technique.

Section – C

04X06 = 24 Marks

15. Explain how Fanuc is a standalone programming controller for CNC machines?
16. Give four popular examples of CAE tools (Strictly programming languages) and also define how they both are different from each other?
17. Explain the MATLAB and PYTHON in the detail.
18. Explain machining and modeling software with a proper example.



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SET B

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,
End-Sem. Examination

Course Code: SMS1502

Time: 2 Hour

Course Name: Integrated CAD-CAM-CNC

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Which sequence best represents the stages of part design and manufacturing?
 - a) CAD-CAM-CNC
 - b) CAM-CAD-CNC
 - c) CNC-CAM-CAD
 - d) CAM-CNC-CAD
2. The use of computers to control the operation of production process is known as
 - a) CAD
 - b) CAE
 - c) CAM
 - d) CAPP
3. _____ is not a stage of PLM
 - a) Design
 - b) Introduction
 - c) Decline
 - d) Growth
4. Meshing is a process
 - a) of reducing infinite to finite degree of freedom
 - b) of increasing finite to infinite degree of freedom
 - c) which is dependent on the material
 - d) cutting the object into small parts
5. Which of the following activities are not covered under CAD?
 - a) Geometric modeling
 - b) Engineering analysis
 - c) Drafting
 - d) None of the above



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6. You are running a proven program (one run before) for the first time in a new setup. You are cautiously allowing the first tool to come into its approach position when you determine that the tool is not going where it is supposed to. It is most likely that:
- the spindle speed is not correct
 - the machine zero designation is not correct
 - the programmed coordinates are not correct
 - the dry run switch should be turned on
7. Which of the following is/are the advantage of CIM
- Increase productivity
 - Increase plant efficiency
 - Reduction in the cost of product
 - All of the above
8. Which of the following is usually employed in the open loop system?
- servo motor
 - stepper motor
 - Induction motor
 - none of the above
9. The number of moveable joints in the base, the arm, and the end effectors of the robot determines?
- Degrees of freedom
 - Payload capacity
 - Operational limits
 - Flexibility
10. For generating a coons patch we require:
- A set of grid points on surface
 - A set of control points
 - Four bounding curves defining surface
 - Two bounding curves and a set of grid control points

Section – B

04X04 = 16 Marks

11. Write down the full form of CAM and name the softwares which is used to achieve this in industry?
12. Define what are geometric primitives and also give 5 different examples of solid geometric primitives.
13. Write down any four differences between MATLAB and Python.
14. What do you mean by rapid prototyping?

Section – C

04X06 = 24 Marks

15. Explain what you mean by CNC control system and give four examples of CNC control systems with their country of origin?
16. Explain the steps of FEM technique used for Computer Simulations of physical systems
17. Differentiate between modeling and machining softwares with suitable examples?
18. Differentiate between DNC and CNC.



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SET-A

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,
End-Sem. Examination

Course Code: SMS1504

Time: 2 Hour

Course Name: Project work

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Feasibility study determines -----
 - a) Whether the project is possible with resources
 - b) Comparing the project with world class manufacturing norms
 - c) Calculate the cost crashing each unit
 - d) Add duration to each unit
2. Who creates the project team?
 - a) Factory manager
 - b) Project manager
 - c) Operation manager
 - d) Purchase manager
3. The basic nature of a project is a _____ one.
 - a) Permanent
 - b) temporary
 - c) a) or b)
 - d) Both a) and b)
4. The project phase model was introduced. Which of the following phases is typically not part of project execution? (Mark only one answer)
 - a) Conception & Initiation
 - b) Performance & Control
 - c) Launch or Execution
 - d) Project Close
5. In Pert/CPM, the burst event represents _____two or more events.
 - a) Splitting
 - b) Joining
 - c) Beginning
 - d) Completion



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6. What is the particular task performance in CPM known as?
 - a) Dummy
 - b) Event
 - c) Activity
 - d) Contract
7. What happens when a project is scheduled by CPM?
 - a) A project is divided into various activities
 - b) Required time for each activity is established
 - c) A sequence of various activities is made according to their importance
 - d) All of the above
8. "Risk" is usually _____ as the project progresses.
 - a) Increased
 - b) Reduced
 - c) Remained Same
 - d) Become Negligible
9. In the initial stage of the project the probability of completing the project is _____.
 - a) Zero
 - b) High
 - c) Low
 - d) Medium
10. Risk in project management is defined as
 - a) An uncertain event that, if it occurs, has a positive effect on project objectives
 - b) An uncertain event that, if it occurs, has a negative effect on project objectives
 - c) An uncertain event that, if it occurs, has a positive or negative effect on project objectives
 - d) An uncertain event that do not have any effect on project objective

Section – B

04X04 = 16 Marks

11. Who is project manager and what are the roles and responsibilities?
12. Define what the project contract is with an example.
13. What is Project planning referring to defining fundamentals?
14. What is project management and explain 6 P's of project management?

Section – C

04X06 = 24 Marks

15. What are the different tools that simplify project planning and explain anyone with an example?
16. Discuss the curve propagation of large projects via different phase timings with proper diagrams?
17. Explain about the project organization structure with the help of a diagram.
18. Do CPM (critical path method) analysis and identify the critical path of the project.

Activity	Predecessor	Duration (Days)
A	–	5
B	A	4
C	A	5
D	B	6
E	C	3
F	D,E	4



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SET-B

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1504

Time: 2 Hour

Course Name: Project work

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. In Pert/CPM, the merge event represents _____ two or more events.
 - a) Splitting
 - b) Completion
 - c) Beginning
 - d) Joining
2. After the “table of content” the main part of the project report should always be written in the following order:
 - a) Introduction, body, conclusion
 - b) Body, introduction, appendix
 - c) Introduction, reference, conclusion
 - d) Conclusion, body, introduction
3. Assembling project team and assigning their responsibilities are done during which phase of a project management?
 - a) Initiation
 - b) Planning
 - c) Execution
 - d) Closure
4. In project management when does planning take place?
 - a) Before the project
 - b) During the project execution
 - c) At the start of the project
 - d) After the project
5. Conflict occurrence in project is
 - a) Unavoidable
 - b) Depend on type of project
 - c) Avoidable
 - d) Depends on culture



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6. Evaluate following statement: The project report should always be written at the end of the - project.
- Yes, because at the end all the information and data are available. It does not make sense to start with project report writing in the beginning therefore.
 - No, the phase "project report writing" should be started at the very beginning and should be a continuous activity during the whole project. It helps to avoid a work overload at the end of the project. If not enough information and data is available, the structure/template of the report can always be prepared.
 - No, the project report should be written at the beginning of the project because the team just needs to follow to what is written in the report. At the end the project team adds only the appendix.
 - None of the answers above is correct.
7. Risk in project management is defined as
- An uncertain management event that, if it occurs, has a positive effect on project objectives
 - An uncertain management event that, if it occurs, has a negative effect on project objectives
 - An uncertain management event that, if it occurs, has a positive and negative effect on project objectives
 - An uncertain event that do not have any effect on project objectives
8. Which stage of project management life cycle requires the maximum time of completion?
- Conceptualization
 - Planning
 - Execution
 - Estimation
9. Conflict occurrence in projects is
- Unavoidable
 - Depend on type of project
 - Avoidable
 - Depends on culture
10. Assembling a project team and assigning their responsibilities are done during which phase of a project management?
- Initiation
 - Planning
 - Execution
 - Closure



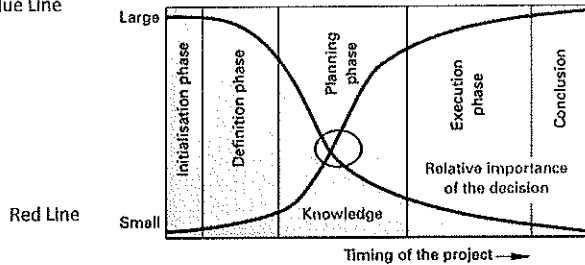
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Section – B

04X04 = 16 Marks

11. What is project management and explain 6 P's?
12. The interplay of knowledge and influence of decisions in the progress of projects.

a) Please name the red line correctly Blue Line



b) Please name the blue line correctly

Figure 4: Influence of the decisions and knowledge on

- c) Explain the importance of the intersection point in the circle in own words. What document should be signed ideally at this point?
- d) Explain about the signed document at intersection point

13. Explain about the project organization structure with help of diagram.
14. Write advantages of project management?

Section – C

04X06 = 24 Marks

15. Explain the progression of a project from **Point A to Point B** with the help of diagram and illustrate the five different phases of the project.
16. Write the name of three typical project risks and to take a suitable risk reduction measure for each risk.
17. Explain about the project organization structure with the help of a diagram.
18. Do CPM (critical path method) analysis and identify the critical path of the project.

Activity	Predecessor	Duration (Days)
A	—	3
B	A	4
C	A	2
D	B	5
E	C	1
F	C	2
G	D, E	4
H	G, F	3



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SET-A

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, III Semester,

End-Sem. Examination

Course Code: SMS1505

Course Name: Quality Management

Time: 2 Hour

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Which of the following is correct in context to Inspection?
 - a) It is a way to prevent the production of bad items
 - b) Inspection adds to the cost of the product but not for its value
 - c) Fatigue and Monotony don't affect any inspection judgment
 - d) None of above
2. Which of the following is not among 7 QC tools?
 - a) Check sheet
 - b) Histogram
 - c) Kanban
 - d) Pareto chart
3. The cause and effect diagram is also called-
 - a) Stratification analysis
 - b) Total quality management
 - c) PDCA technique
 - d) Fish - bone diagram
4. PDCA cycle have-
 - a) 12 steps
 - b) 11 steps
 - c) 10 steps
 - d) 13 steps
5. In any process variability is due to-
 - a) Selected cause
 - b) Technical cause
 - c) Chance cause and assignable cause
 - d) None of the above



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6. Which generic approach's precursor is the Toyota Production System?
 - a) Kaizen
 - b) TQM
 - c) Lean manufacturing
 - d) Six sigma
7. 80/20 Rules is applicable for-
 - a) Pareto Charts
 - b) Fishbone Diagram
 - c) To define the OEE
 - d) PFMEA
8. Dock Inspection is called-
 - a) Incoming Inspection
 - b) Final Inspection
 - c) In process Inspection
 - d) BOP Inspection
9. For Attribute data which chart is prepared-
 - a) X bar Chart
 - b) Range Chart
 - c) P chart
 - d) None of the above
10. A six sigma process has defect level below _____ defects per million opportunities.
 - a) 3.4
 - b) 4.3
 - c) 5.6
 - d) 6.0

Section – B

04X04 = 16 Marks

11. Differentiate between Quality control & Quality assurance with practical example.
12. What is COPQ? Define Appraisal and prevention cost.
13. Write down purpose of inspection.
14. When assignable causes are identified in a process, explain with an example?

Section – C

04X06 = 24 Marks

15. What are the different type of wastes in Lean manufacturing & define them?
16. Name the 7 QC tool. Explain the fishbone diagram with neat & clean Sketch.
17. Explain Pareto chart with appropriate example.
18. Write at least six characteristics of quality circle.



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

SET-B

Registration No.:

School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,
End-Sem. Examination

Course Code: SMS1505

Time: 2 Hour

Course Name: Quality Management

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section – A

10X01 = 10 Marks

1. Which of the following statement is correct?
 - a) R – charts are to control the central tendency of the process
 - b) R – charts are to control the dispersion of the process
 - c) R – charts are to control the mean of the process
 - d) B & C both
2. HEIJUNKA stands for:
 - a) Production stop
 - b) Production start
 - c) Production leveling
 - d) Mass production
3. Cost of quality is given by costs of:
 - a) Prevention + appraisal + internal failure + external failure
 - b) Prevention + appraisal
 - c) Internal failure + external failure
 - d) Appraisal + internal failure
4. In component of CoQ, cost of good quality contains
 - a) Prevention cost
 - b) Appraisal cost
 - c) Both A and B
 - d) None of the above
5. PDCA cycle stands for
 - a) Plan do check act
 - b) Process do check act
 - c) Plan do check act
 - d) Process do check act



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6. Kaizen is
 - a) Small change
 - b) Big improvement
 - c) Sudden impact
 - d) All of the above.
7. POKA-YOKA is the Japanese term for
 - a) Card
 - b) Mistake proof
 - c) Continuous improvement
 - d) Fishbone diagram
8. The aim of Just – in – time manufacturing is to eliminate
 - a) Time wastage
 - b) Labor wastage
 - c) Cost of excessive inventory
 - d) All of the above
9. The objective of ISO – 9000 family of Quality Management is
 - a) Customer satisfaction
 - b) Employee satisfaction
 - c) Skill enhancement
 - d) Environmental issue
10. The various organization evaluation standard of ISO 14000 series of standards are
 - a) Environmental management system
 - b) Environmental auditing
 - c) Environmental performance evaluation
 - d) All the above

Section – B

04X04 = 16 Marks

11. What is TPS? Explain.
12. What is inspection?
13. Define SPC.
14. Write any three definitions of quality.

Section – C

04X06 = 24 Marks

15. What are seven QC tools? Explain scatter diagram.
16. Explain process capability ratio and process capability index.
17. Write down seven wastes in lean manufacturing.
18. Explain at least five lean tools in detail.



School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1507

Course Name: Multiaxis Machining

Time: 2 Hour

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section - A

10X01 = 10 Marks

1. Power transmission component includes
 - a) Belts
 - b) Shaft
 - c) Couplings
 - d) All of the above
2. Joining elements include:
 - a) Pins
 - b) Snap-fits
 - c) Both a & b
 - d) None of the above
3. Electric motors are driven by _____ forces.
 - a) Ferromagnetic
 - b) Electromagnetic
 - c) Gamma
 - d) External
4. Asynchronous motor is an ____ induction motor.
 - a) AC
 - b) DC
 - c) Water
 - d) Gas
5. Basic Components of CNC Controllers are
 - a) Power Supply unit
 - b) Circuitry protection unit
 - c) Motor driver unit
 - d) All of the above



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6. Rapid Feed rate of STAR SB-20R for X, Y and Z axes is _____
- 35000 mm/min
 - 35000m/min
 - 35000mm/rev
 - 20 m/min
7. Maximum machining Diameter of STAR SB-20R is
- 20 mm
 - 18 mm
 - 25 mm
 - 30 mm
8. Maximum Drilling Capability of STAR SB-20R for stationary tool is
- 20 mm
 - 18 mm
 - 25 mm
 - 35 mm
9. Maximum spindle speed of STAR SB-20R is
- 15000 rpm
 - 20000 rpm
 - 10000 rpm
 - 12000 rpm
10. What is operational mode of STAR SB-20R?
- Left Handed
 - Right Handed
 - Neutral
 - Both a and b

Section – B

04X04 = 16 Marks

- Write down the main difference between synchronous and Asynchronous electric motor.
- Write down the various popular controllers in use.
- Name the various functional units of STAR SB-20R.
- Write down the capacity and major specifications of STAR SB-20R.

Section – C

04X06 = 24 Marks

- What do you mean by functional units of a machine tool? Name the various functional units of a CNC lathe.
- Describe in brief about various types of five axis machining centers along with their application.
- Write down the differences between Five axis machining and (3+2) axis machining?
- Provide details of various Power transmission units of STAR SB-20R.



School of Manufacturing Skills

Session: 2021-22 (Winter Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Course Code: SMS1507

Time: 2 Hour

Course Name: Multiaxis Machining

Max. Marks: 50

Instructions:

1. Attempt all questions.
2. Section A contains 10 Questions. Each question carries 1 Mark.
3. Section B contains 04 Questions. Each question carries 4 Marks.
4. Section C contains 04 Questions. Each question carries 6 Marks.

Section - A

10X01 = 10 Marks

1. Rapid Feed rate of Mazak Variaxis j-500/5X for X, Y and Z axes is _____
 - a) 30000 mm/min
 - b) 30000m/min
 - c) 30000mm/rev
 - d) 30 mm/min
2. Maximum Workpiece Diameter Capacity of Mazak Variaxis j-500/5X is
 - a) 600 mm
 - b) 500 mm
 - c) 510 mm
 - d) 550 mm
3. Maximum Workpiece Height Capacity of Mazak Variaxis j-500/5X for stationary tool is
 - a) 200 mm
 - b) 180 mm
 - c) 250 mm
 - d) 350 mm
4. Maximum spindle speed of Mazak Variaxis j-500/5X is
 - a) 15000 rpm
 - b) 20000 rpm
 - c) 10000 rpm
 - d) 12000 rpm
5. How many tools can be stored in Mazak Variaxis j-500/5X?
 - a) 18
 - b) 30
 - c) 12
 - d) 20



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6. Value of Spindle taper of Mazak Variaxis j-500/5X is
 - a) No. 30
 - b) No. 20
 - c) No. 25
 - d) No. 40
7. Rapid Feed rate of Mazak Variaxis j-500/5X for A and C axes is _____
 - a) 30000 mm/min
 - b) 10800° mm/min
 - c) 10800° m/min
 - d) 10800° mm/rev
8. A axis travel from -30° to +120°.
 - a) True
 - b) False
9. Mist-type coolant is used in Mazak Variaxis j-500/5X
 - a) True
 - b) False
10. We can run Mazak Variaxis j-500/5X machine with door open.
 - a) True
 - b) False

Section – B

04X04 = 16 Marks

11. Write the benefits offered by 5-axis machining.
12. What are the reasons behind achieving high productivity in Mazak Variaxis j-500/5X.
13. What are the reasons behind achieving high accuracy in Mazak Variaxis j-500/5X.
14. Write the reason why Mazak Variaxis j-500/5X machine have excellent machine operability.

Section – C

04X06 = 24 Marks

15. Write down the Major units of Mazak Variaxis j-500/5X.
16. Write six features of Fanuc 21M.
17. Write six features of SINUMERK OPERATE 840D.
18. Write down the Drive units of Mazak Variaxis j-500/5X.