BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Set-A

Course Code: SCS1502 **Time: 2 Hours**

Course Name: CNC Woodworking Machining Specialist **Max. Marks: 50**

Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer all question from section B, each question carries four marks.
- Answer all question from section C, each question carries six marks.

Section – A

10X01 = 10 Marks

Q.1.Which type of the Path mode given in fig.?

(A) Point control (B) 2D path control

(C) 3D path control (D) None of these

Q.2.Series hole is the example of _____control mode?

A) Point control (B) 2D path control

(C) 3D path control (D) None of these

Q.3.Wooden figures is the example of _____control mode?

A) Point control (B) 2D path control

(C) 3D path control (D) None of these

Q.4.Which one of the following is the required compressed air for connections in CNC Router?

(A) 9-10 bar (B) 2-7 bar

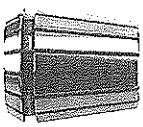
(C) 6-7 bar (D)10-11 bar

Q.5. Which type of CNC machine is installed in our workshop?

(A) Boom type (B) Moving Gentry

(C) Both (A) & (B) (D) None of these

Q.6.What is name of System accessory given in figure?



(A) Hydro Feed (B) Collect chuck

(C) Heat-Shrink fit chucks (D) Cross Stop

Q.7.All the programs cab be started from_____?

(A) CNC Board (B) Techno Manager

(C) Program Editor (D) Tool Arch

Q.8.The working order of the individual programs cab be defined in list form from_____?

(A) CNC Board (B) Techno Manager

(C) Program Editor (D) Tool Arch

Q.9. Which one of the following is the Program category where we start the program?

(A) CNC Board (B) Techno Manager

(C) 2 D Simulator (D) None of above

Q.10.Which one of the following is the Program Category where we find the tool data?

(A) Techno Manager (B) CNC Board

(C) 3D Simulator (D) None of these

Section – B

04X04 = 16 Marks

Q.11.What is Boom Type CNC Machine? Also write its advantages.

Q.12.What are the two control modes in CNC Router machine?

Q.13.What are the three major axes used in CNC Router?

Q.14.Explain the faces of a work piece used for programming in CNC Router machine.

Section – C

04X06 = 24 Marks

Q.15.Explain the program overview of CNC Router with the help of block diagram.

Q.16.Explain the two safety devices used in CNC Router.

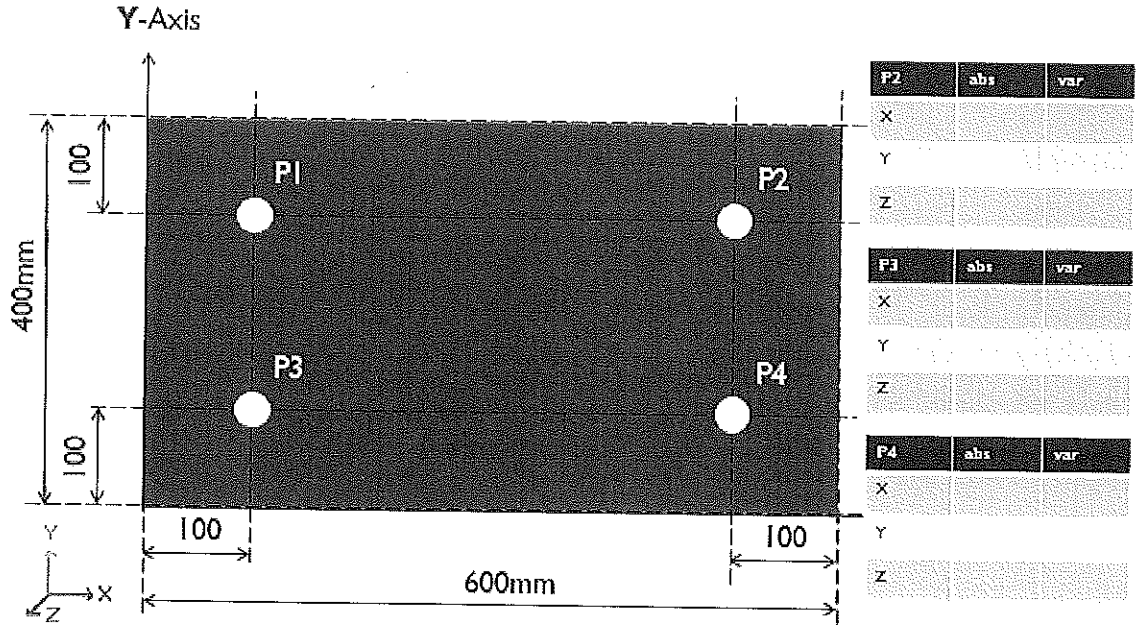
Q.17.What are the two types of Table used for clamping in CNC Router?

Q.18. Write the coordinates of points given in attached sheet?

Drilling: Vertical single drilled holes G81

The drilled holes should be 10 mm deep with a diameter of 35mm.

Please enter the coordinates first absolute and then with variables.



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Set-A

Answer key

Course Code: SCS1502 **Time: 2 Hours**

Course Name: CNC Woodworking Machining Specialist **Max. Marks: 50**

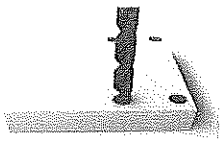
Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer all question from section B, each question carries four marks.
- Answer all question from section C, each question carries six marks.

Section – A

10X01 = 10 Marks

Q.1.Which type of the Path mode given in fig.?



(A) Point control (B) 2D path control

(C) 3D path control (D) None of these (A)

Q.2.Series hole is the example of _____control mode?

A) Point control (B) 2D path control

(C) 3D path control (D) None of these (A)

Q.3.Wooden figures is the example of _____control mode?

A) Point control (B) 2D path control

(C) 3D path control (D) None of these (C)

Q.4.Which one of the following is the required compressed air for connections in CNC Router?

(A) 9-10 bar (B) 2-7 bar

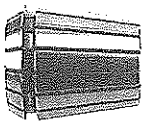
(C) 6-7 bar (D)10-11 bar (C)

Q.5. Which type of CNC machine is installed in our workshop?

(A) Boom type (B) Moving Gentry

(C) Both (A) & (B) (D) None of these (A)

Q.6.What is name of System accessory given in figure?



(A) Hydro Feed (B) Collect chuck

(C) Heat-Shrink fit chucks (D) Cross Stop (B)

Q.7.All the programs cab be started from_____?

(A) CNC Board (B) Techno Manager

(C) Program Editor (D) Tool Arch (A)

Q.8.The working order of the individual programs cab be defined in list form from_____?

(A) CNC Board (B) Techno Manager

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Q.9. Which one of the following is the Program category where we start the program?

(A) CNC Board (B) Techno Manager

(C) 2 D Simulator (D) None of above (A)

Q.10.Which one of the following is the Program Category where we find the tool data?

(A) Techno Manager (B) CNC Board

(C) 3D Simulator (D) None of these (A)

Section – B

04X04 = 16 Marks

Q.11.What is Boom Type CNC Machine? Also write its advantages.

ANS:- This is the most common design in the carpentry trade

Advantages

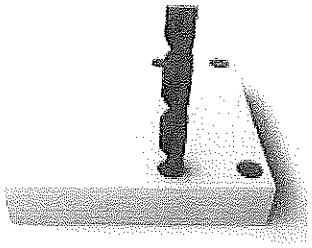
- Working area is not limited in any direction.
- Flexible usage.
- Inexpensive.

Disadvantages

- Very stable construction of the machine is necessary.
- Lowering of the boom is possible

Q.12.What are the two control modes in CNC Router machine?

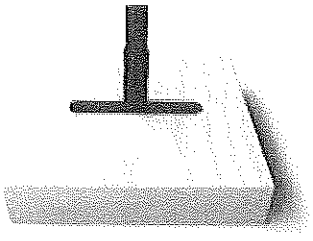
ANS: - **Point Control: -** The positioning is arbitrary and must take place outside the material.



Application: -

1. Simple holes.

- **Route Control: -** With this type, the control system calculates a movement based on the start and end point. As a rule, this takes place parallel to the axis.



Application: -

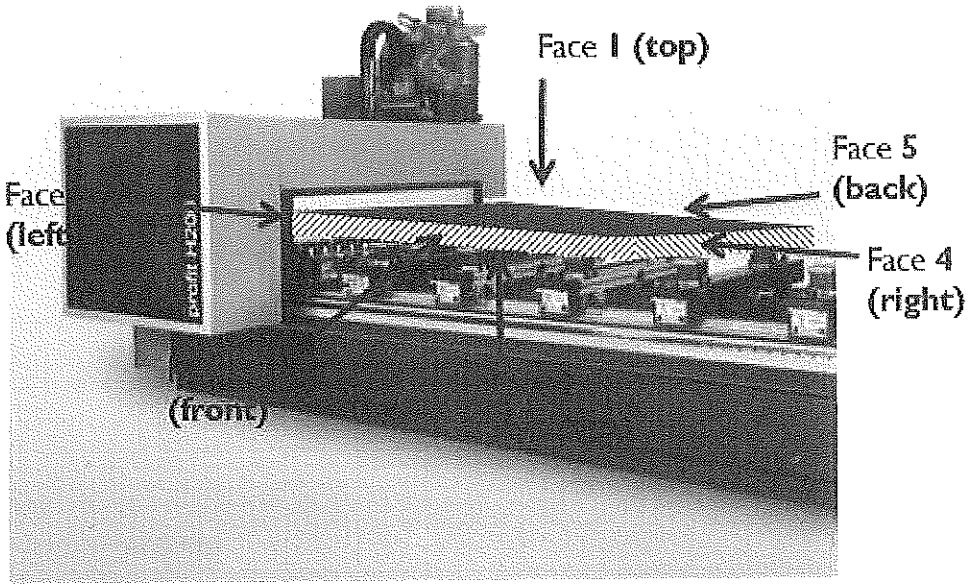
1. Distribution of Plates.
2. Edge Processing.

Q.13. What are the three major axes used in CNC Router?

ANS: - The **X axis** has the longest travel and is usually referred to as the length.

- The **Y axis** is also called the width. Depending on the type of machine, it can be designed using the portal to be disabled.
- The Z axis controls the milling cutter in height and in thickness.
- The maximum machining size of work pieces is determined by the travel paths.

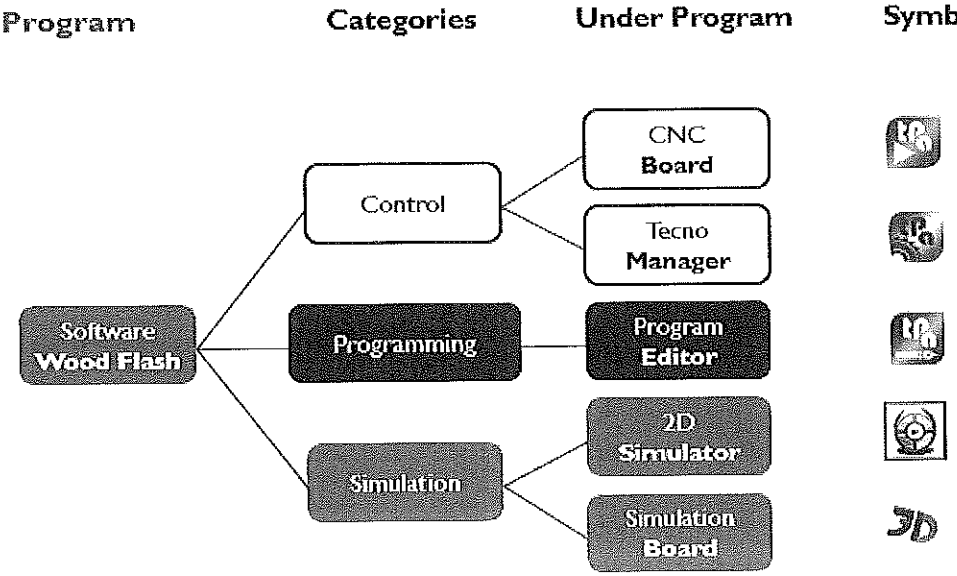
Q.14. Explain the faces of a work piece used for programming in CNC Router machine.



Section – C

04X06 = 24 Marks

Q.15. Explain the program overview of CNC Router with the help of block diagram.



Q.16.Explain the two safety devices used in CNC Router.

ANS: - **Foot Mats: -** The distance between the machine and the operator is secured during processing by foot mats. If the operator steps on the step mat, the machine switches off immediately. The floor mats are divided into three areas, the middle one is always locked when the machine is processing. The right or left area becomes free when working in the middle or in the other area.

Bumpers: - Bumpers serve as a crumple zone between the traveling column and the operating personnel. The machine stops immediately when touched.

Q.17.What are the two types of Table used for clamping in CNC Router?

ANS: - **Console Table: -** A very common type of table that is equipped with various clamping devices:

- Different vacuum blocks.
- Multispanner.
- Clamping devices.
- Adapter Plates.

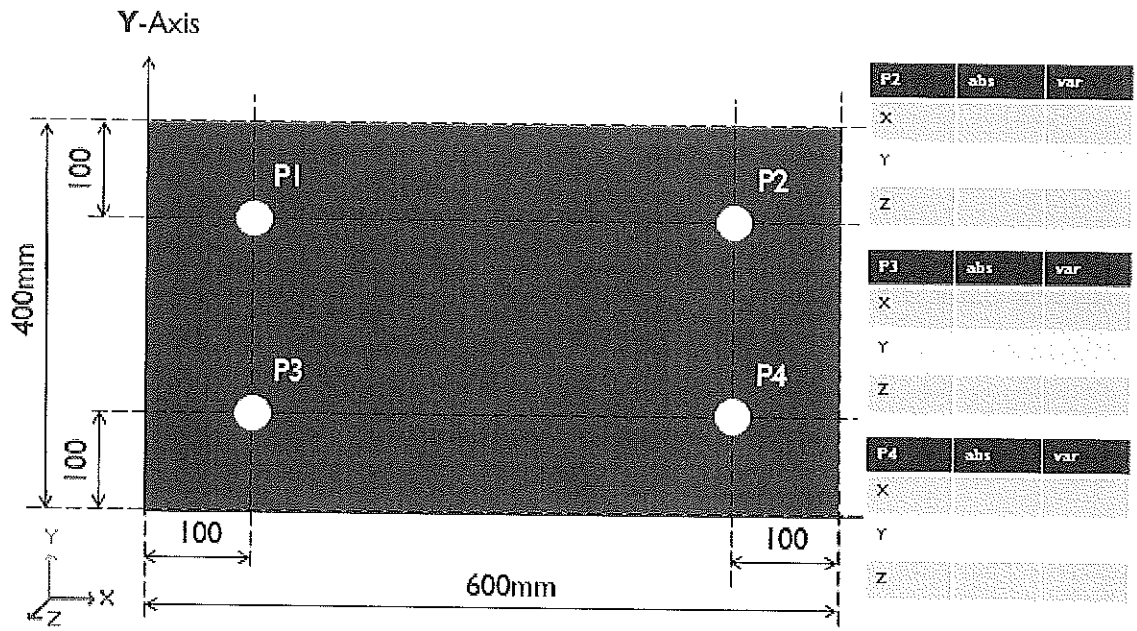
Grid Table (wood or aluminium): - Thanks to the form-fitting attachment of clamping devices, the grid table enables secure fixation, even with high cutting forces. The grid table is suitable for the nesting process or vacuum clamp. The vacuum connections can be opened quickly using a key.

Q.18. Write the coordinates of points given in attached sheet?

Drilling: Vertical single drilled holes G81

The drilled holes should be 10 mm deep with a diameter of 35mm.

Please enter the coordinates first absolute and then with variables.



P2	Absolute	Variable
X	500	X-100
Y	300	Y-100
Z	-10	-10

P3	Absolute	Variable
X	100	100
Y	100	100
Z	-10	-10

P4	Absolute	Variable
X	500	X-100
Y	100	100
Z	-10	-10

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Set-B

Course Code: SCS1502 **Time: 2 Hours**

Course Name: CNC Woodworking Machining Specialist **Max. Marks: 50**

Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer all question from section B, each question carries four marks.
- Answer all question from section C, each question carries six marks.

Section – A

10X01 = 10 Marks

Q.1.Which one of the following is the name of Software used in CNC Router?

(A) Woodflash (B) Woodflash 4.0

(c) Woodflash 3.0 (D) None of the above

Q.2.How many are the number of faces in Work pieces for machining in CNC Router Machine?

(A) 6 (B) 4

(C) 5 (D) None of these

Q.3.Which one of the following is the face where we are not able to perform machining?

(A) Face 1 (B) Face 2

(C) Face 3 (D) Face 6

Q.4.Which one of the following is the face where we do vertical drills?

(A) Face 1 (B) Face 2

(C) Face 4 (D) Face 5

Q.5.Which one of the following is the rotary axes in CNC Router Machines?

(A) Axis a (B) Axis b

(C) Axis c (D) All of above

Q.1.Which one of the following is the name of Symbol attached?

(A) CNC Board (B) Techno Manager

(c) 2D Simulator (D) 3D Simulator

Q.2.Which one of the following is the name of Symbol attached?

Manish Kumar

(A) CNC Board
(B) Techno Manager
(C) Program Editor
(D) 3D Simulator

Q.3. Which one of the following is the Program category where we start the program?

(A) CNC Board
(B) Techno Manager
(C) 2 D Simulator
(D) None of above

Q.4.Which one of the following is the Program Category where we find the tool data?

(A) Techno Manager
(B) CNC Board
(C) 3D Simulator
(D) None of these

Q.5.What is the required Pressure for connections of CNC Router Machines?

(A) 6 – 7 Bar
(B) 4 – 5 Bar
(C) 10 – 11 Bar
(D) 8 – 9 Bar

Section – B

04X04 = 16 Marks

Q.11.What are the advantages and disadvantages of Boom Type CNC Machine?

Q.12.What are the two control modes in CNC Router machine?

Q.13.What is Absolute dimensioning and Relative dimensioning?

Q.14.Name the parts of Feed Unit and Drill gear.

Section – C

04X06 = 24 Marks

Q.15.Explain the program overview of CNC Router with the help of block diagram.

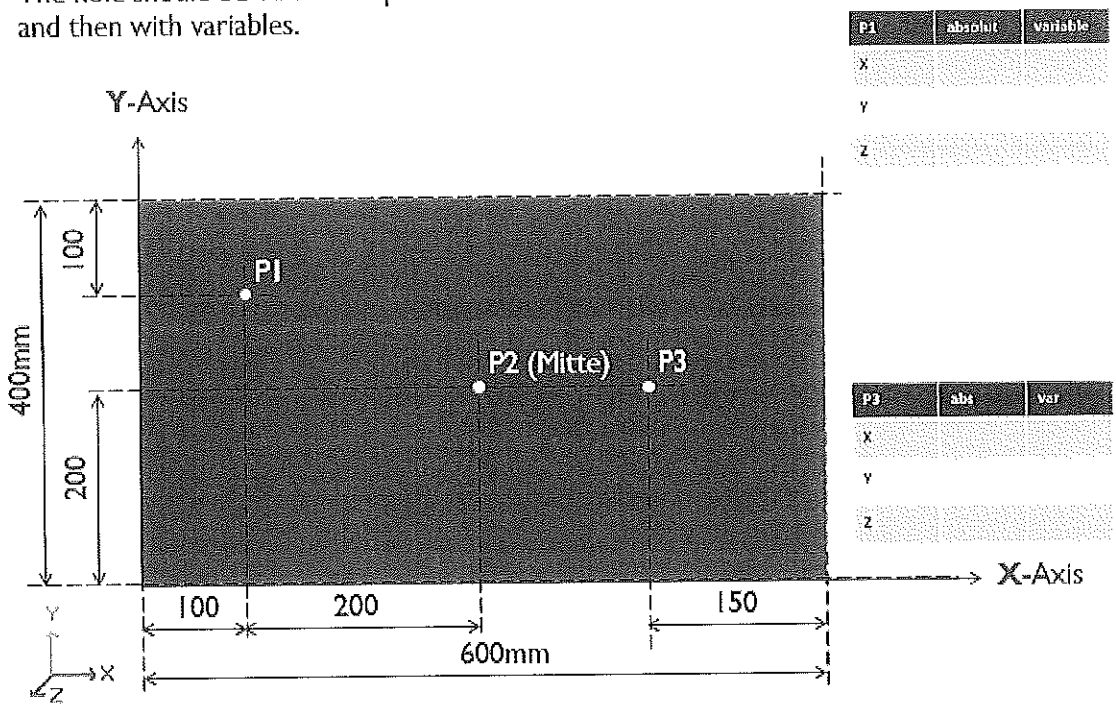
Q.16.Define the term WOP and CNC.

Q.17.What are the functions of 2D Simulator and 3D Simulator?

Q.18. Write the coordinates of points given in attached sheet?

Drilling (point) defined:

The hole should be 10mm deep. Please enter the coordinates first absolute and then with variables.



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Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, V Semester,

End-Sem. Examination

Set-B

Answer key

Course Code: SCS1502 **Time: 2 Hours**

Course Name: CNC Woodworking Machining Specialist **Max. Marks: 50**

Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer all question from section B, each question carries four marks.
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Section – A

10X01 = 10 Marks

Q.1.Which one of the following is the name of Software used in CNC Router?

(A) Woodflash (B) Woodflash 4.0

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Q.2.How many are the number of faces in Work pieces for machining in CNC Router Machine?

(A) 6 (B) 4

(C) 5 (D) None of these (A)

Q.3.Which one of the following is the face where we are not able to perform machining?

(A) Face 1 (B) Face 2

(C) Face 3 (D) Face 6 (B)

Q.4.Which one of the following is the face where we do vertical drills?

(A) Face 1 (B) Face 2

(C) Face 4 (D) Face 5 (A)

Q.5.Which one of the following is the rotary axes in CNC Router Machines?

(A) Axis a (B) Axis b

(C) Axis c (D) All of above (D)

Q.1.Which one of the following is the name of Symbol attached?

(A) CNC Board (B) Techno Manager

(c) 2D Simulator (D) 3D Simulator (A)

Q.2.Which one of the following is the name of Symbol attached?

(A) CNC Board
(B) Techno Manager
(C) Program Editor
(D) 3D Simulator (B)

Q.3. Which one of the following is the Program category where we start the program?

(A) CNC Board
(B) Techno Manager
(C) 2 D Simulator
(D) None of above (A)

Q.4.Which one of the following is the Program Category where we find the tool data?

(A) Techno Manager
(B) CNC Board
(C) 3D Simulator
(D) None of these (A)

Q.5.What is the required Pressure for connections of CNC Router Machines?

(A) 6 – 7 Bar
(B) 4 – 5 Bar
(C) 10 – 11 Bar
(D) 8 – 9 Bar (A)

Section – B

04X04 = 16 Marks

Q.11.What are the advantages and disadvantages of Boom Type CNC Machine?

ANS:- **Advantages**

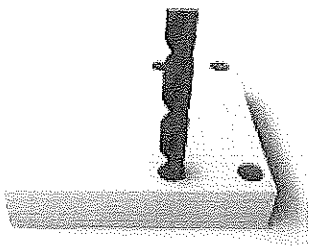
- Working area is not limited in any direction.
- Flexible usage.
- Inexpensive.

Disadvantages

- Very stable construction of the machine is necessary.
- Lowering of the boom is possible

Q.12.What are the two control modes in CNC Router machine?

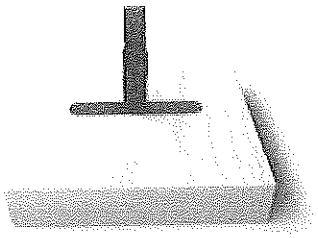
- ANS:- **Point Control: -** The positioning is arbitrary and must take place outside the material.



Application: -

1. Simple holes.

- **Route Control: -** With this type, the control system calculates a movement based on the start and end point. As a rule, this takes place parallel to the axis.



Application: -

1. Distribution of Plates.
2. Edge Processing.

Q.13.What is Absolute dimensioning and Relative dimensioning?

ANS:- **Absolute dimension**

The absolute dimension refers to a zero point and is therefore also called reference.
Absolute dimensioning is the basis for the CNC program creation particularly suitable. It is easy to interpret and can be easily converted into a program. Similarly, edits can easily be compared and controlled with the plan.

Relative dimensioning:

The measures always refer to the previously measured point. If you change the dimensions of the previous point, all other points will be moved automatically. This can lead to errors, but is also very handy for edits that need to be moved together. For example, in a series hole drilling, if the first hole is moved, all the other holes should also be moved. The relative dimensioning is also known as chain or incremental.

Q.14.Name the parts of Feed Unit and Drill gear.

ANS:-

S.N0	Parts Name	S.no	Parts Name
Feed Unit		Drill gear	
1	Milling Motor	4	Drills vertically in X
2	Driver for C-axis	5	Grooving saw 0/90 Degree
3	Support points and blowing nozzle for aggregates	6	Drills horizontally in Y
		7	Drills vertically in Y

Section – C

04X06 = 24 Marks

Q.15.Explain the program overview of CNC Router with the help of block diagram.

ANS:-

Program	Categories	Under Program	Symbol
Software Wood Flash	Control	CNC Board	
		Tecno Manager	
	Programming	Program Editor	
	Simulation	2D Simulator	
		Simulation Board	

Q.16.Define the term WOP and CNC.

ANS:- **CNC (Computerized Numerical Control): -** CNC machines are machine tools that, thanks to the use of Computer-controlled measuring and coordinate systems, are able to automatically produce work pieces with high precision, even for complex shapes. They outperform mechanically controlled machines in terms of precision and speed.

WOP (Workshop-oriented programming): - Most machine suppliers sell their machines with a WOP.These CAD-like programs simplify programming for the operator and represent the work piece with the machining graphically.

Q.17.What are the functions of 2D Simulator and 3D Simulator?

ANS:- > The working time can be simulated here.

> Adjustable speed from 1/256- to 256-times the real speed.

> The working order of a program can be checked and changed

> A program can be simulated in 3D and in real time.

> Profiles are shown realistically.

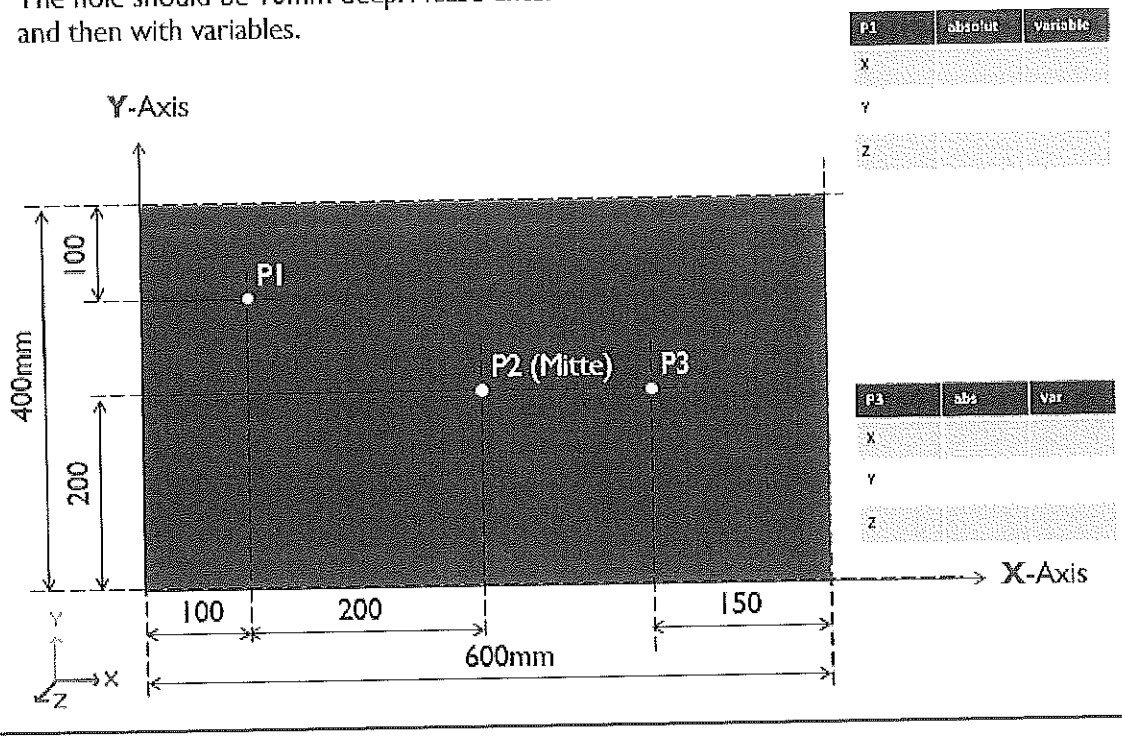
> Collisions with a vacuum pods are displayed by colour change.

> Working order can be checked and changed.

Q.18. Write the coordinates of points given in attached sheet?

Drilling (point) defined:

The hole should be 10mm deep. Please enter the coordinates first absolute and then with variables.



P1	Absolute	Variable
X	100	100
Y	300	Y-100
Z	-10	-10

P3	Absolute	Variable
X	450	X-100
Y	200	Y/2

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Course Code: SCS1504 **Time: 2 Hours**

Course Name: Project planning specialist in Cabinetmaking and Joinery (SET A) **Max. Marks: 50**

Instruction: All the questions are compulsory.

Exam is to be conducted in computer lab.

Section – A

10X01 = 10 Marks

Q1. Which one is not a project selection criteria?

(a) Number of workers (b) Likely profit

(c) Risk (d) Rate of return

Q2. The project appraisal includes ---------

(a) Market appraisal (b) Technical appraisal

(c) Financial appraisal (d) All of these

Q3. The start or completion of task is called

(a) A duration (b) An activity

(c) An event (d) None of these

Q4. In a CPM/PERT network a dummy activity is necessary when

(a) Two activities have the same starting node

(b) Two activities have the same ending node

(c) A node does not actually connect to another node

(d) Two activities share the same starting and ending node

Q5. PERT requires

(a) Double time estimate (b) Triple time estimate

(c) Single time estimate (d) None of these

Q6. Activities A, B, and C are the immediate predecessors for Y activity. If the earliest finish times for the three activities are 12, 15, and 10, then the earliest start time for Y will be

(a) 15 (b) 10

(c) 12 (d) Cannot be determined

Q7. Resource aggregation is required for

Manish Kumar

(a) Resource profiles
(b) Project selection
(c) Project screening
(d) Cost estimation

Q8. In Project crashing, rent and overheads are treated as

(a) Significant Cost
(b) Insignificant costs
(c) Direct Costs
(d) Indirect Costs

Q9. Who creates the project team?

(a) Factory manager
(b) Operation manager
(c) Project manager
(d) Purchase manager

Q10. Project monitoring is required:

(a) Before commencement of the project
(b) During implementation of the project
(c) After completion of the project
(d) At any stage of the project deemed necessary

Section – B

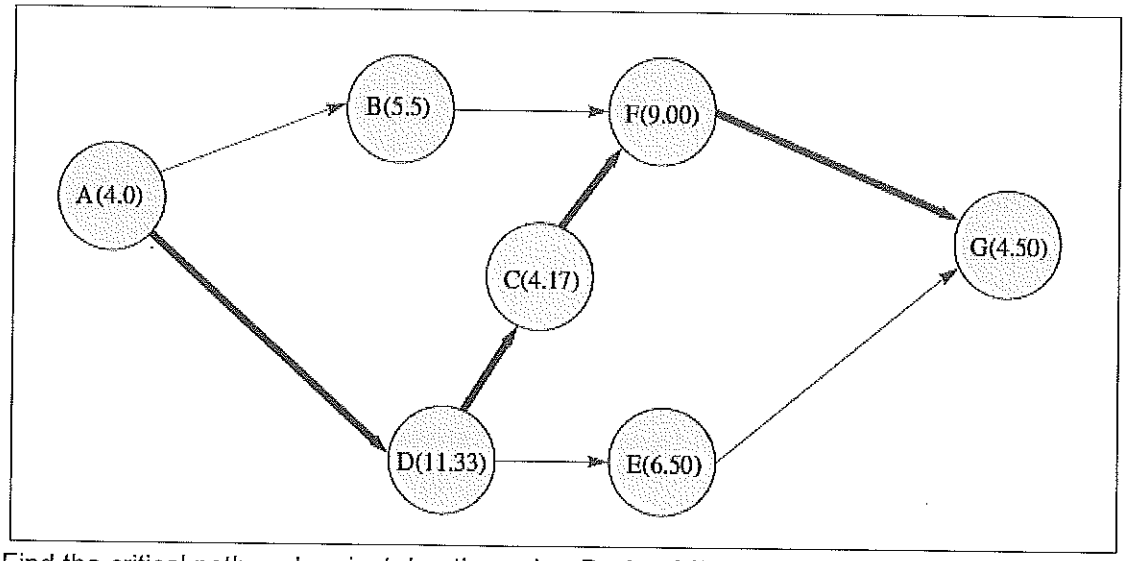
04X04 = 16 Marks

Q11. Write a short note on the project monitoring reference.

Q12. Define the various type of resources.

Q13. Write the major characteristics of a project.

Q14. An AON network for the project is given as below.



Find the critical path and project duration using ***ProjectLibre*** software.

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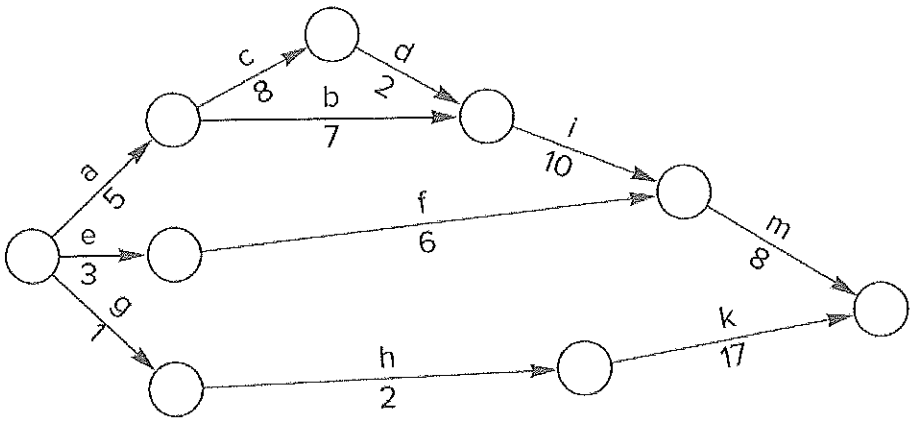
Section – C

04X06 = 24 Marks

Q15. An AOA network for the project is given as below. Find the EST, EFT, LST, LFT, slack and the critical path.



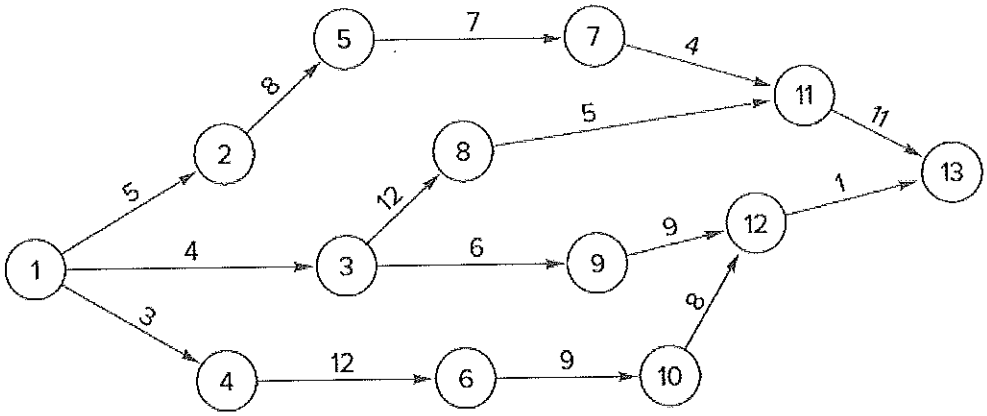
Q16. A project has following information:

Activity	Predecessors	Duration
A	-	8
B	-	4
C	A	6
D	A	11
E	B	9
F	A, C	3
G	B, D, E, F	1

(a) Develop the AON network for the given project and check for the redundancies (use tabular method).

(b) Eliminate the redundancies and make the corrections in the network.

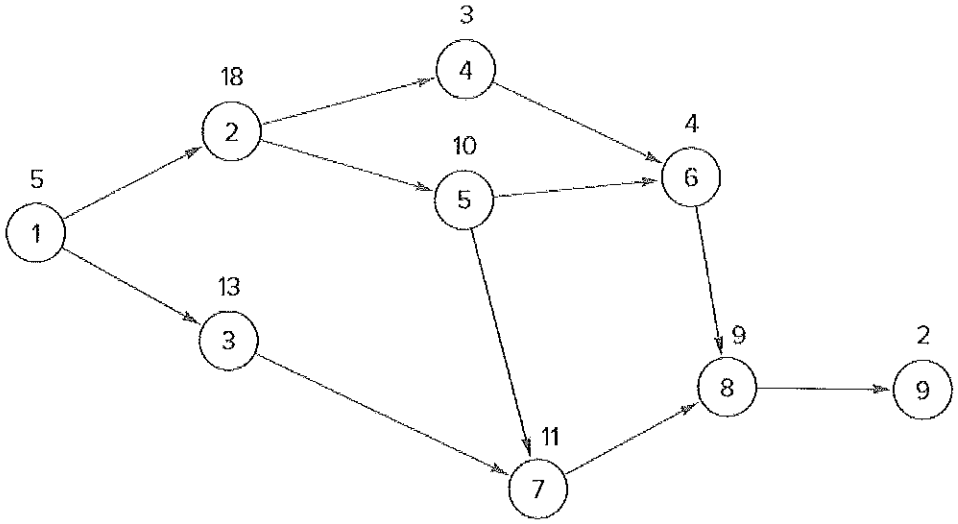
Q17. An AOA network for the project is given as below.



Find the critical path and project duration using ***ProjectLibre*** software.

Q18. An AON network for the project is given as below.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY



Find the critical path and project duration using ***ProjectLibre*** software.

Solution

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Answer key

Course Code: SCS1504 **Time: 2 Hours**

Course Name: Project planning specialist in Cabinetmaking and Joinery (SET A) **Max. Marks: 50**

Instruction: All the questions are compulsory.

Exam is to be conducted in computer lab.

Section – A

10X01 = 10 Marks

Q1. Which one is not a project selection criteria?

(a) Number of workers (b) Likely profit

(c) Risk (d) Rate of return (a)

Q2. The project appraisal includes ---------

(a) Market appraisal (b) Technical appraisal

(c) Financial appraisal (d) All of these (d)

Q3. The start or completion of task is called

(a) A duration (b) An activity

(c) An event (d) None of these (c)

Q4. In a CPM/PERT network a dummy activity is necessary when

(a) Two activities have the same starting node

(b) Two activities have the same ending node

(c) A node does not actually connect to another node

(d) Two activities share the same starting and ending node (d)

Q5. PERT requires

(a) Double time estimate (b) Triple time estimate

(c) Single time estimate (d) None of these (b)

Q6. Activities A, B, and C are the immediate predecessors for Y activity. If the earliest finish times for the three activities are 12, 15, and 10, then the earliest start time for Y will be

(a) 15 (b) 10

(c) 12 (d) Cannot be determined (a)

Q7. Resource aggregation is required for

Manish Kumar

(a) Resource profiles (b) Project selection

(c) Project screening (d) Cost estimation (a)

Q8. In Project crashing, rent and overheads are treated as

(a) Significant Cost (b) Insignificant costs

(c) Direct Costs (d) Indirect Costs (d)

Q9. Who creates the project team?

(a) Factory manager (b) Operation manager

(c) Project manager (d) Purchase manager (c)

Q10. Project monitoring is required:

(a) Before commencement of the project

(b) During implementation of the project

(c) After completion of the project

(d) At any stage of the project deemed necessary (b)

Section – B

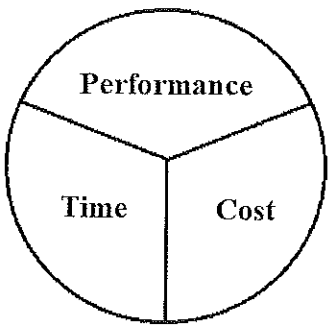
04X04 = 16 Marks

Q11. Write a short note on the project monitoring reference.

Ans.

Monitoring Reference

Project monitoring basically means we are concerned about three things. We are concerned about the performance of the project that things or activities are being done as per specifications. They are being done at these appropriate times and we are doing them within the cost.



For the three indicators of project progress that is the performance, the time and the cost there has to be a common reference for purposes of measurement in comparison. This common reference is nothing but the original plan or the budgeted cost and value curve which we just determined. What we just determined in form of the budgeted cost and value curve that is either an early start schedule or a late start schedule or any schedule in between that serves as a common reference and this is used for finding out how the project is performing as you keep going on. That's the important yardstick.

Q12. Define the various type of resources.

Ans.

Resource Types

Before we go into the various kinds of procedures which are available for dealing with these resource profiles it's worthwhile to make a distinction between renewable and non-renewable resources and based on that we would see how the methods available for dealing with these would vary. Resources are of two types renewable and non-renewable.

Non-renewable resources: Non-renewable resources are those resources which are often referred to as consumable resources as well. Money is a non-renewable resource. It's non-renewable in the sense that if I have 100 rupee note today and if I spend it, that 100 rupee note is not available to me tomorrow. I have to have a new 100 rupee note. In that sense it's a consumable. In this category we are basically concerned with the total resource consumption which means if we are at time t here what we are interested is in the total consumption up to time t. Looking at examples here money, energy, fuel, raw materials are all instances of non- renewable resources and in fact these resources are best handled by time-cost trade-offs.

Renewable resources: On the other hand manpower is a renewable resource. If I have one person working with me today I will use him today. I can use him again tomorrow. In that sense it's a renewable resource. It doesn't get consumed. For renewable resources, the concern is with the total resource usage at each point of time. Example of renewable resources are like manpower or power or machines or fuel flow. The simplest way of handling these resources is through resource aggregation.

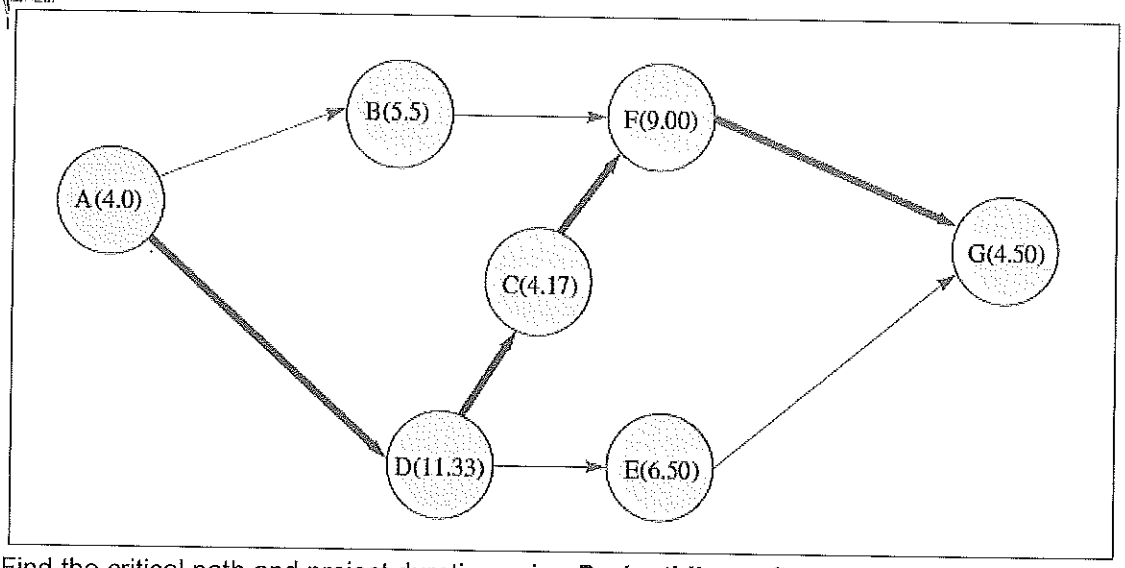
Q13. Write the major characteristics of a project.

Ans.

The major characteristics of a project

1. An established objective.
2. Well defined collection of jobs.
3. Generally non-repetitive and onetime effort.
4. Jobs are interrelated through precedence.
5. A defined life span with a beginning and an end.
6. Usually, the involvement of several departments and professionals.
7. Specific time, cost, and performance requirements.
8. Interdependencies
9. Conflict
10. Involve uncertainty

Q14. An AON network for the project is given as below.



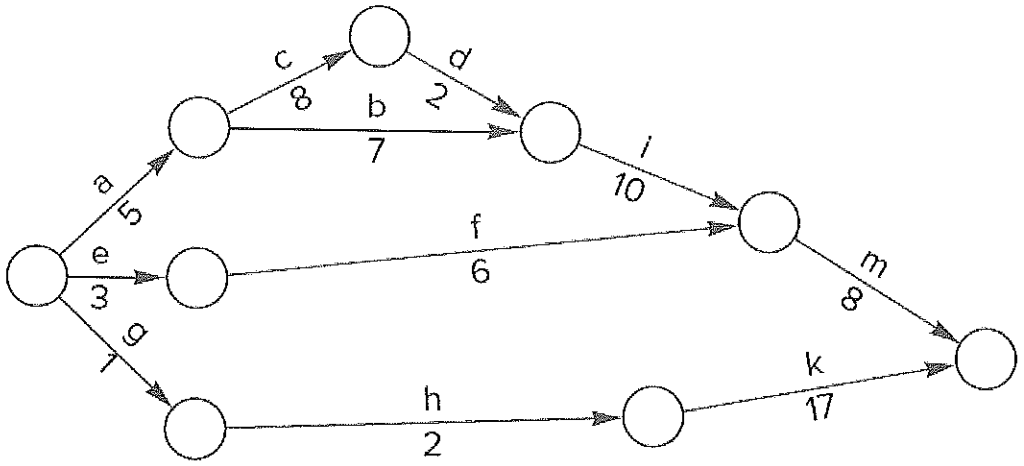
Find the critical path and project duration using ***ProjectLibre*** software.

Ans. Critical Path = A-D-C-F-G
Project Duration = 33

Section – C

04X06 = 24 Marks

Q15. An AOA network for the project is given as below. Find the EST, EFT, LST, LFT, slack and the critical path.



Ans.

Activity	Earliest start (ES)	Latest start (LS)	Earliest finish (EF)	Latest finish (LF)	Slack (LS-ES)	Critical Activity
a	0	5	0	5	0	Yes
e	0	3	16	19	16	
g	0	1	13	14	13	

	5	13	5	13	0	Yes
b	5	12	8	15	3	
d	13	15	13	15	0	Yes
f	3	9	19	25	16	
h	1	3	14	16	13	
i	15	25	15	25	0	Yes
m	25	33	25	33	0	Yes
k	3	20	16	33	13	

Critical Path = a-c-d-i-m
Project Duration = 33

Q16. A project has following information:

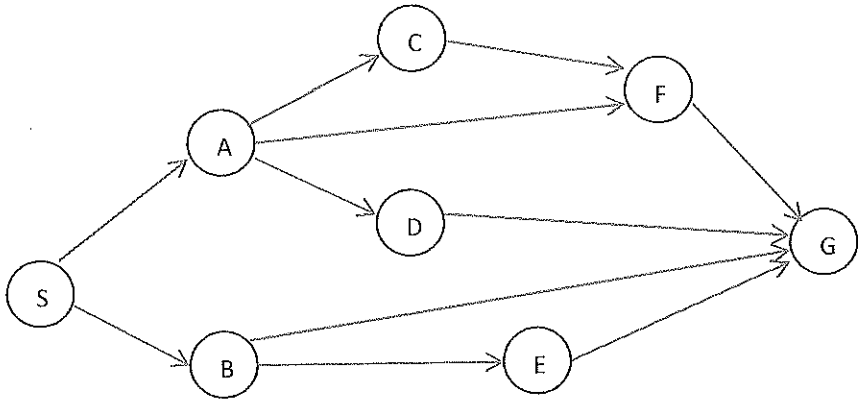
Activity	Predecessors	Duration
A	-	8
B	-	4
C	A	6
D	A	11
E	B	9
F	A, C	3
G	B, D, E, F	1

(a) Develop the AON network for the given project and check for the redundancies (use tabular method).

(b) Eliminate the redundancies and make the corrections in the network.

Ans.

Network



Job	Predecessors						
	A	B	C	D	E	F	G
A							
B							
C	x						
D	x						
E		x					
F	x		x				
G		x		x	x	x	

In this network connections from A to F and B to G are redundant.

Network after removing redundancies.

Q17. An AOA network for the project is given as below.

Find the critical path and project duration using ***ProjectLibre*** software.

Ans. Critical Path = 1-2-5-7-11-13
Project Duration = 35

Q18. An AON network for the project is given as below.

Find the critical path and project duration using ***ProjectLibre*** software.

Ans. Critical Path = 1-2-5-7-8-9
Project Duration = 55

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Course Code: SCS1504 **Time: 2 Hours**

Course Name: Project planning specialist in Cabinetmaking and Joinery (SET B) **Max. Marks: 50**

Instruction: All the questions are compulsory.

Exam is to be conducted in computer lab.

Section – A

10X01 = 10 Marks

Q1. 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

Q2. The project selection process includes ---------

(a) Project identification & screening (b) Project appraisal

(c) Project selection (d) All of these

Q3. Dummy activities are used to

(a) Determine the critical path (b) Maintain the required net work

(c) Determine the project completion time (d) None of these

Q4. The numbering of the nodes in A-O-A is done

(a) From left to right

(b) From Right to Left

(c) Randomly

(d) On the basis of the duration of the activity

Q5. PERT stands for

(a) Programme Estimation and Reporting Technique

(b) Process Estimation and Review Technique

(c) Programme Evaluation and Review Technique

(d) Planning Estimation and Resulting Technique

Q6. Activities P, Q, and R are the immediate predecessors for activity S. If the earliest finish times for the three activities are 11, 14, and 9, then the earliest start time for S will be

(a) 20
(b) 11
(c) 9
(d) 14

Q7. In resources levelling ----------
(a) Total duration of project is reduced
(b) Uniform demand of resources is achieved
(c) Total duration of project is increased
(d) Cost of project is controlled

Q8. Project crashing is the method for ----------
(a) Shortening the project duration by reducing the time of one or more critical activities
(b) Adding resources at critical points
(c) Doing technical analysis of the finished work for review
(d) Adding duration to each activity

Q9. Who is responsible for project implementation & control?
(a) Factory manager
(b) Operation manager
(c) Project manager
(d) Purchase manager

Q10. Which of the following is considered as project monitoring reference
(a) Time
(b) Performance
(c) Cost
(d) All of these

Section – B

04X04 = 16 Marks

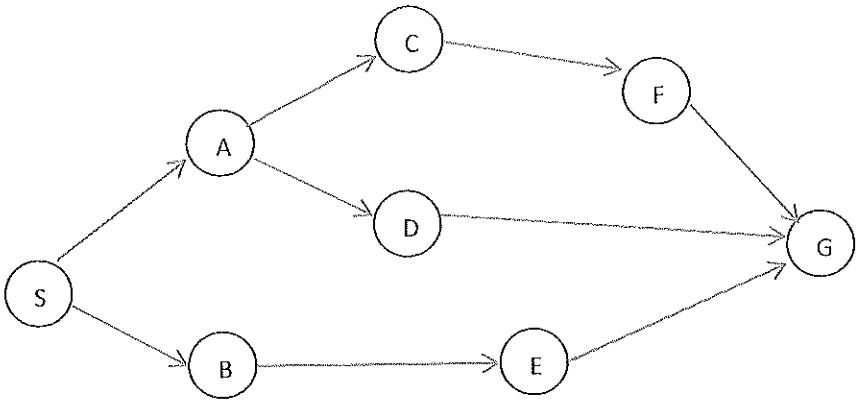
Q11. Write a short note on the project completion.

Q12. Define the resource aggregation and resource levelling.

Q13. Write a short note on Work breakdown structure.

Q14. A project has following information:

Activity	Duration
A	8
B	4
C	6
D	11
E	9
F	3
G	1

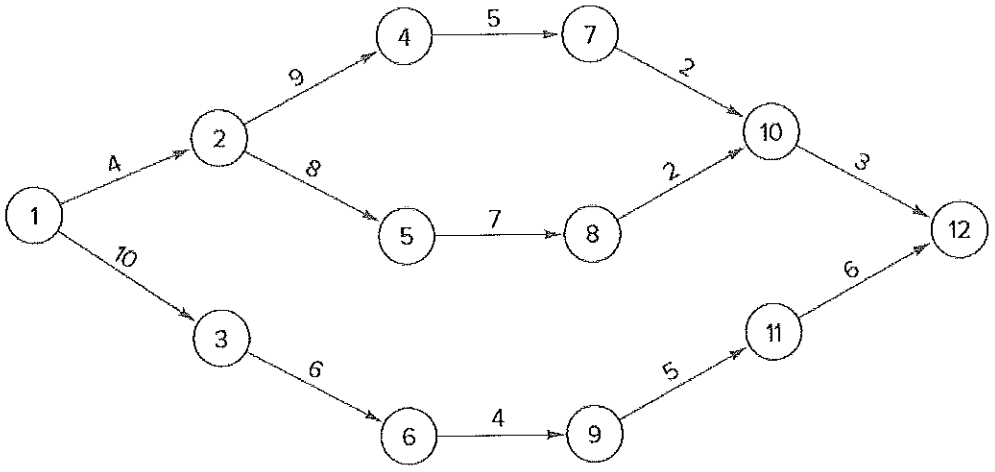


Find the critical path and project duration using ***ProjectLibre*** software.

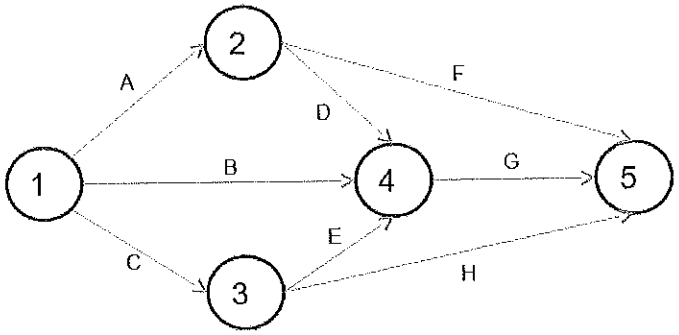
Section – C

04X06 = 24 Marks

Q15. An AOA network for the project is given as below. Find the EST, EFT, LST, LFT, slack and the critical path.



Q16. The time-cost data for a project is given below. Using time-cost trade-off method find the minimum cost and the corresponding duration of the project. The project indirect costs is 100 rupees per day.



Time – Cost Data

Activity	Normal		Crash		Cost Slope
	Days	Rs	Days	Rs	Rs / Day
A	4	100	3	200	100
B	7	280	5	520	120
C	3	50	2	100	50
D	5	200	3	360	80
E	2	160	2	160	Infinity
F	10	230	8	350	60
G	7	200	5	480	140
H	2	100	1	200	100

Q17. An AOA network for the project is given as below.

Activity	Immediate Predecessor	Normal Time (weeks)
A	—	12
B	A	14
C	—	10
D	C	17
E	C	18
F	C	12
G	D	15
H	E	8
I	F	7
J	I	12
K	B	9
M	G	3
N	H	11
P	H, J	8
End	K, M, N, P	

Find the critical path and project duration using ***ProjectLibre*** software.

Q18. An AON network for the project is given as below.

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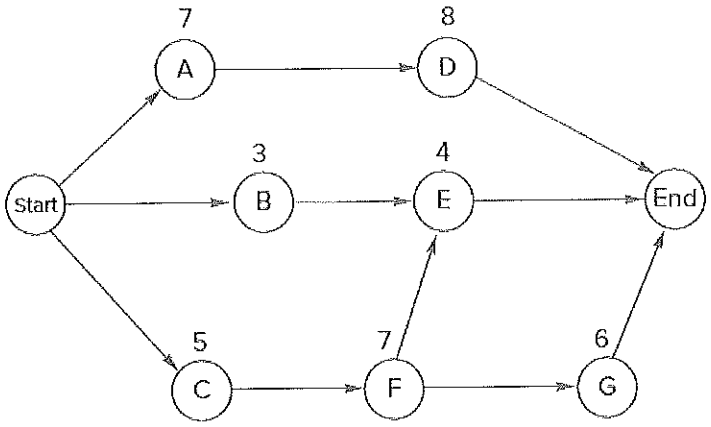

Find the critical path and project duration using ***ProjectLibre*** software.

Solution

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Answer key

Course Code: SCS1504 **Time: 2 Hours**

Course Name: Project planning specialist in Cabinetmaking and Joinery (SET B) **Max. Marks: 50**

Instruction: All the questions are compulsory.

Exam is to be conducted in computer lab.

Section – A

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(b) From Right to Left

(c) Randomly

(d) On the basis of the duration of the activity (a)

Q5. PERT stands for

(a) Programme Estimation and Reporting Technique

(b) Process Estimation and Review Technique

(c) Programme Evaluation and Review Technique

(d) Planning Estimation and Resulting Technique (c)

Q6. Activities P, Q, and R are the immediate predecessors for activity S. If the earliest finish times for the three activities are 11, 14, and 9, then the earliest start time for S will be

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(a) 20 (b) 11

(c) 9 (d) 14 (d)

Q7. In resources levelling ----------

(a) Total duration of project is reduced

(b) Uniform demand of resources is achieved

(c) Total duration of project is increased

(d) Cost of project is controlled (b)

Q8. Project crashing is the method for ----------

(a) Shortening the project duration by reducing the time of one or more critical activities

(b) Adding resources at critical points

(c) Doing technical analysis of the finished work for review

(d) Adding duration to each activity (a)

Q9. Who is responsible for project implementation & control?

(a) Factory manager (b) Operation manager

(c) Project manager (d) Purchase manager (c)

Q10. Which of the following is considered as project monitoring reference

(a) Time (b) Performance

(c) Cost (d) All of these (d)

Section – B

04X04 = 16 Marks

Q11. Write a short note on the project completion.

Ans.

Project Completion

The last phase in the life cycle of a project is the stage of project completion. Once the project is implemented the stage of completion of the project starts. The project is complete and it has to be handed over to the user. There are a number of behavioural, sometimes technical, sometimes accounting problems which crop up at the stage of completion and moreover completion is also the stage where you try to consolidate your learnings from the project and final report writing. The entire project team which has essentially gathered together to accomplish a certain task, now time for them to say good bye and wind up all the activities.

Major activities at the Project Completion

1. Accounting and report writing
2. Handing over the project to user
3. Disbanding of project team

Learnings from the Project Experience

1. Difficulties Faced:
2. Realistic Estimates:
3. Human Relations

Q12. Define the resource aggregation and resource levelling.

Ans.

Resource aggregation

Aggregation, simply means as the name suggests, is the process of working out the resource usage profile from the schedule. The objective is to construct the resource usage profiles from the project schedule and the activity resource data. These are the two major inputs that you need for constructing the aggregated resource profile. We can superimpose the resource requirements for individual activities on the project schedule then you would have the aggregation of resources and you would be able to work out the resource usage profile. This process is called resource aggregation. Resource aggregation is actually simply trying to find out the resource requirements for a particular schedule.

Resource levelling

Resource levelling is the process of smoothening the resource usage profiles by shifting slack jobs without worsening the project duration. This helps in obtaining a better and more acceptable resource profile. Once we have the aggregated profile, we might find that this is high during this particular period and we are not really very satisfied with this high. Now we might want to smoothen the resource usage profiles. We can do that by shifting slack jobs without worsening the project duration.

Q13. Write a short note on Work breakdown structure.

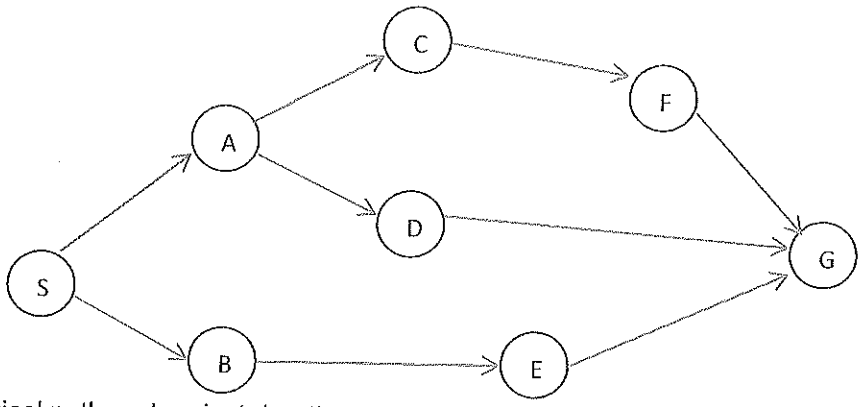
Ans. Work breakdown structure (WBS)

WBS is the process of subdividing project deliverables and project work into smaller, more manageable components. The work breakdown structure (WBS) is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables, with each descending level of the WBS representing an increasingly detailed definition of the project work. The WBS organizes and defines the total scope of the project, and represents the work specified in the current approved project scope statement. The planned work is contained within the lowest level WBS components, which are called work packages. A work package can be scheduled, cost estimated, monitored, and controlled.

Q14. A project has following information:

Activity	Duration
A	8
B	4
C	6
D	11
E	9

F	3
G	1



Find the critical path and project duration using ***ProjectLibre*** software.

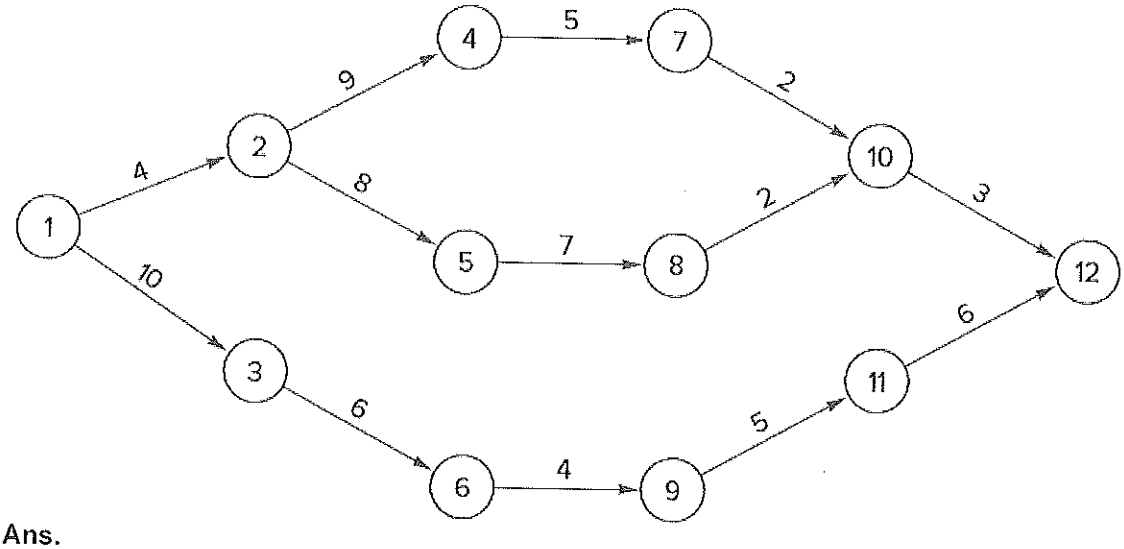
Ans. Critical Path = A-D-G

Project Duration = 20

Section – C

04X06 = 24 Marks

Q15. An AOA network for the project is given as below. Find the EST, EFT, LST, LFT, slack and the critical path.



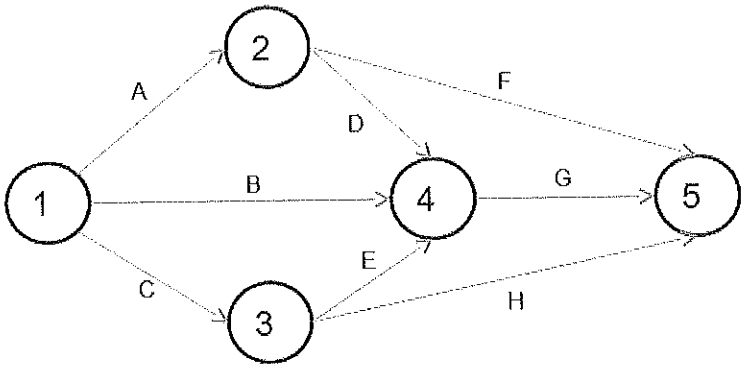
Ans.

Activity	Earliest start (ES)	Latest start (LS)	Earliest finish (EF)	Latest finish (LF)	Slack (LS-ES)	Critical Activity
1-2	0	4	1	5	1	
1-3	0	10	0	10	0	Yes
2-4	4	13	5	14	1	
2-5	4	12	11	19	7	

3-6	10	16	10	16	0	Yes
4-7	13	18	14	19	1	
5-8	12	19	19	26	7	
6-9	16	20	16	20	0	Yes
7-10	18	20	26	28	8	
8-10	19	21	26	28	7	
9-11	20	25	20	25	0	Yes
10-12	21	24	28	31	7	
11-12	25	31	25	31	0	Yes

Critical Path = 1-3-6-9-11-12
Project Duration = 31

Q16. The time-cost data for a project is given below. Using time-cost trade-off method find the minimum cost and the corresponding duration of the project. The project indirect costs is 100 rupees per day.



Time – Cost Data					
Activity	Normal		Crash		Cost Slope
	Days	Rs	Days	Rs	Rs / Day
A	4	100	3	200	100
B	7	280	5	520	120
C	3	50	2	100	50

D	5	200	3	360	80
E	2	160	2	160	Infinity
F	10	230	8	350	60
G	7	200	5	480	140
H	2	100	1	200	100

Ans.

These are the various paths in the project.

	Activities							
Paths	A	B	C	D	E	F	G	H
ADG	100			80			140	
AF	100					60		
BG		120					140	
CEG			50		X		140	
CH			50					100

Project Duration	11	12	13	14	15	16
Direct Cost	2100	1880	1680	1480	1400	1320
Indirect Cost	1100	1200	1300	1400	1500	1600
Total Cost	3200	3080	2980	**2880**	2900	2920

The direct cost of the project at normal duration can be calculated by adding the normal cost of each activity.

Our project duration was from 11, 12, 13, 14, 15 and 16 days we have calculated the minimum direct costs, the indirect costs and the total costs. In this particular situation the optimum would be to target for a 14 day duration which would give us a total minimum cost of 2880 rupees.

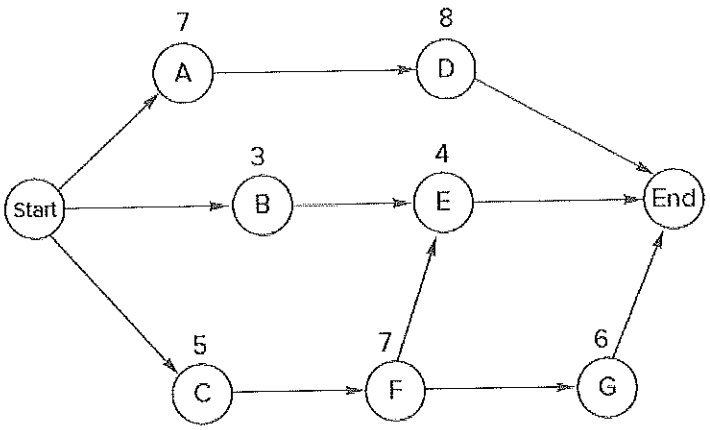
Q17. An AOA network for the project is given as below.

Activity	Immediate Predecessor	Normal Time (weeks)
A	—	12
B	A	14
C	—	10
D	C	17
E	C	18
F	C	12
G	D	15
H	E	8
I	F	7
J	I	12
K	B	9
M	G	3
N	H	11
P	H, J	8
End	K, M, N, P	

Find the critical path and project duration using ***ProjectLibre*** software.

Ans. Critical Path = C-F-I-J-P
Project Duration = 49

Q18. An AON network for the project is given as below.



Find the critical path and project duration using ***ProjectLibre*** software.

Ans. Critical Path = Start-C-F-G-End
Project Duration = 18

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skill

Session: 2019-20 (Summer / Winter Semester)

B. Voc. / M. Voc. Program, 5th Semester,

End-Sem. Examination

Course Code: SC1505 **Time: 2 Hours**

Course Name: Advance Carpenter Mathematics (Set A) **Max. Marks: 50**

Instruction: (if any) Scientific calculator is permitted.

Section – A

10X01 = 10 Marks

1) The value of variable that occurs with greatest frequency in data set called as

a) Median b) Mode c) Mean d) None of these.

2) A variable having a countable number for distinct value is called as

a) Continuous b) Discrete c) Specific d) None

3) The specific humidity is the mass of water vapour present in

(a) one cubic meter of wet air (b) one cubic meter of dry air (c) one kg of wet air (d) one kg of dry air

4) The ratio of the actual specific humidity to the specific humidity when the air is saturated at the same dry bulb temperature is called

(a) Humidity ratio (b) Relative humidity (c) Absolute humidity (d) Degree of saturation

5) Air at 26 °C, one cubic meter of air contains 11 grams of steam. What is the relative humidity? (Maximum humidity at 26 C is 24.4 g/m3)

a) 44. 3% b) 55.3% c) 45.08% d) 42.5%

6) Power transmitted from belt drive is given by

a) Torque × Force b) Torque × Tension c) Torque × Speed d) Tension × Mass

7)In a machine, the drive motor has a pulley with a diameter of 220 mm. The speed is specified at 1480 rpm. How big must the pulley be on the working shaft if it is to run at 2680 rpm?

a) 121.49 b) 398.37 c) 1480 d) None

8) A circular saw blade has a diameter of 400mm and a speed of 3000 1 / min. How big is its cutting speed?

a) 62.8 m/s b) 226 m/s c) 62.8 mm/s d) 226 mm/s

9) The prediction of future value of product is called as

a) JIT b) Scheduling c) Forecasting d) None of the above.

10) Depreciation of asset stands for

a) Temporary decline b) Permanent decline c) scrap value of the product d) None

Manish Kumar

Section – B

04X04 = 16 Marks

11) Write short notes on: a) Demand forecasting b) Dry and Wet bulb temperature.

12) What are the objectives of Production planning and control?

13) RJ Machines Ltd has purchased a machine for 100,000 INR with an estimated scrap value of 20,000 INR and a useful life of 5 years. Calculate depreciation amount and rate.

14) A gearwheel with 36 teeth sits on the shaft of a motor. The driven wheel has 52 teeth. The engine speed is specified at 1450 rpm (n,). Find speed of driven gear wheel and gear ratio.

a) What speed does the circular saw shaft reach?

b) What is the drive ratio?

Section – C

04X06 = 24 Marks

15) What are the steps for data analysis or measuring the central tendency of data?

16) The market with 168 operating firms has the following distribution of average number of workers in various income group. Find the average salary paid.

Income group	150-300	300-500	500-800	800-1200	1200-1800
No of firms	40	32	26	28	42
Average no of workers	8	12	7.5	8.5	4

17) The floor of a room is 3.50m by 4.50m. The room height is 2.4m. The air has a relative humidity of 75% and a temperature of 18°C. How much water vapor is there in this air?
(Maximum humidity at 18°C is 15.4 g/m^3.)

18) An engine run at 150 rpm drives a line shaft by means of a belt. The engine pulley is 750mm diameter and pulley of line shaft 450 mm. A 900 mm diameter pulley on a line shaft drives a 150 mm diameter pulley keyed to dynamo shaft. Find the speed of dynamo shaft. When 1. there is no slip 2 there is slip of 2% at each drive.

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Registration No.: .....

(Solution)

Answer key

School of Woodworking Skill

Session: 2019-20 (Summer / Winter Semester)

B. Voc. / M. Voc. Program, 5th Semester,

End-Sem. Examination

Course Code: SC1505 **Time: 2 Hours**

Course Name: Advance Carpenter Mathematics (Set A) **Max. Marks: 50**

Instruction: (if any) Scientific calculator is permitted.

Section – A

10X01 = 10 Marks

1) The value of variable that occurs with greatest frequency in data set called as

a) Median b) Mode c) Mean d) None of these.

2) A variable having a countable number for distinct value is called as

a) Continuous b) Discrete c) Specific d) None

3) The specific humidity is the mass of water vapour present in

(a) one cubic meter of wet air (b) one cubic meter of dry air (c) one kg of wet air (d) one kg of dry air

4) The ratio of the actual specific humidity to the specific humidity when the air is saturated at the same dry bulb temperature is called

(a) Humidity ratio (b) Relative humidity (c) Absolute humidity (d) Degree of saturation

5) Air at 26 °C, one cubic meter of air contains 11 grams of steam. What is the relative humidity? (Maximum humidity at 26 C is 24.4 g/m3)

a) 44. 3% b) 55.3% c) 45.08% d) 42.5%

6) Power transmitted from belt drive is given by

a) Torque × Force b) Torque × Tension c) Torque × Speed d) Tension × Mass

7)In a machine, the drive motor has a pulley with a diameter of 220 mm. The speed is specified at 1480 rpm. How big must the pulley be on the working shaft if it is to run at 2680 rpm?

a) 121.49 b) 398.37 c) 1480 d) None

8) A circular saw blade has a diameter of 400mm and a speed of 3000 1 / min. How big is its cutting speed?

a) 62.8 m/s b) 226 m/s c) 62.8 mm/s d) 226 mm/s

9) The prediction of future value of product is called as

a) JIT b) Scheduling c) Forecasting d) None of the above.

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10) Depreciation of asset stands for

a) Temporary decline b) Permanent decline c) scrap value of the product d) None

Section – B

04X04 = 16 Marks

11) Write short notes on: a) Demand forecasting b) Dry and Wet bulb temperature.

Solution:

a) **Demand forecasting** is the art and science of forecasting customer demand to drive holistic execution of such demand by corporate supply chain and business management. It involves techniques including both informal methods, such as educated guesses, and quantitative methods, such as the use of historical sales data and statistical techniques or current data from test markets. Demand forecasting may be used in production planning, inventory management, and at times in assessing future capacity requirements, or in making decisions on whether to enter a new market.It is use for predicting future demand for the product. In other words it refers to the prediction of probable demand for a product or a service on the basis of the past events and prevailing trends in the present.

b) Dry and Wet bulb temperature: **Dry bulb temperature** It is the temperature of air recorded by a thermometer, when it is not affected by the moisture present in the air. The dry bulb temperature (briefly written as DBT) is generally denoted by td or tdb.

Wet bulb temperature It is the temperature of air recorded by a thermometer, when its bulb is surrounded by a wet cloth exposed to the air. Such a thermometer is called *wet bulb thermometer. The wet bulb temperature (briefly written as WBT) is generally denoted by tw or twb.At 100% relative humidity, the wet-bulb temperature is equal to the air temperature (dry-bulb temperature) and is lower at lower humidity

12) What are the objectives of Production planning and control?

Solution:

The objectives of PPC are as follows:

- to ensure safe and economical production process
- to effectively utilize plant to maximize productivity
- to maximize efficiency by proper coordination in production process
- to ensure proper delivery of goods
- to place the right man for the right job, at right time for right wages.
- to minimize labor turnover
- to reduce the waiting time

13) RJ Machines Ltd has purchased a machine for 100,000 INR with an estimated scrap value of 20,000 INR and a useful life of 5 years. Calculate depreciation amount and rate using straight line method.

Solution:

The straight line depreciation for the machine would be calculated as follows:

1.Cost of the asset: INR 100,000

2.Cost of the asset – Estimated scrap value: INR 100,000 – INR 20,000 = INR 80,000 total depreciable cost

3.Useful life of the asset: 5 years

4.Divide step (2) by step (3): INR 80,000 / 5 years = **INR 16,000 annual depreciation amount**

Therefore, Company A would depreciate the machine at the amount of INR 16,000 annually for 5 years. The depreciation rate can also be calculated if the annual depreciation amount is known. The depreciation rate is the annual depreciation amount / total depreciable cost. In this case, the machine has a straight-line depreciation rate of INR 16,000 / INR 80,000 = **20%.**

14) A gearwheel with 36 teeth sits on the shaft of a motor. The driven wheel has 52 teeth. The engine speed is specified at 1450 rpm (n,). Find speed of driven gear wheel and gear ratio.

a) What speed does the circular saw shaft reach?

b) What is the drive ratio?

Solution:

$$n_2 = \frac{d_1 n_1}{d_2} = \frac{36 \times 1450}{52} = 240.41\ mm$$

$$i = \frac{z_2}{z_1} = \frac{52}{36} = 1.4$$

Section – C

04X06 = 24 Marks

15) What are the steps for data analysis or measuring the central tendency of data?

Solution:

Measure of understanding the nature of data is called as central tendency of data. The most important measure of central tendency is: Mean, Median and Mode. Fig represents the step involved in data analysis and to measure the central tendency of the data. Descriptive measures that indicate where the center or the most typical value of the variable lies in collected set of measurements are called measures of center. Measures of center are often referred to as averages. The median and the mean apply only to quantitative data, whereas the mode can be used with either quantitative or qualitative data. The sample mode of a qualitative or a discrete quantitative variable is that value of the variable which occurs with the greatest frequency in a data set

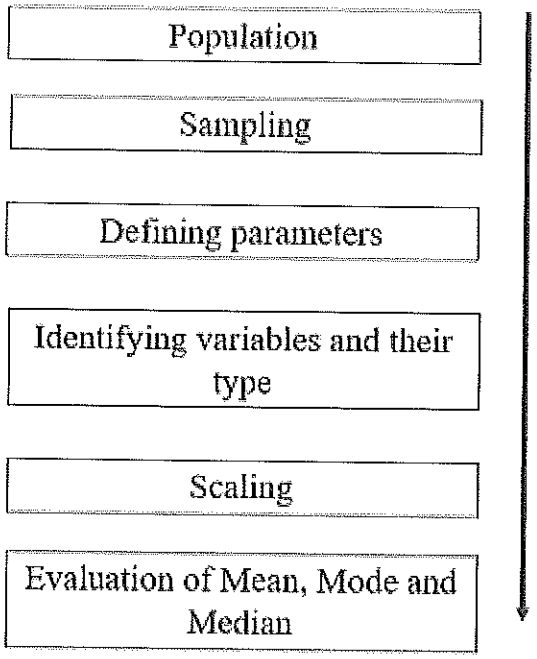


Fig. Steps of data analysis or Measure of Central tendency in descriptive statistics.

16) The market with 168 operating firms has the following distribution of average number of workers in various income group. Find the average salary paid.

Income group	150-300	300-500	500-800	800-1200	1200-1800
No of firms	40	32	26	28	42
Average no of workers	8	12	7.5	8.5	4

Solution:

Computation of Average Salary Paid

Income-group X	Midvalues m	No. of firms	Average No. of workers	Frequency (f)	mf
(1)	$(m.v)$ (2)	(3)	(4)	(3×4) (5)	(2×5) (6)
150—300	225	40	8	320	72,000
300—500	400	32	12	384	1,53,600
500—800	650	26	7.5	195	1,26,750
800—1,200	1,000	28	8.5	238	2,38,000
1,200—1,800	1,500	42	4	168	2,52,000
				$N =$ 1,305	$\Sigma mf =$ 8,42,350

$$\text{Mean} = \bar{X} = \frac{\Sigma mf}{N} = \frac{8,42,350}{1305} = 645.4789 \text{ rupees}$$

Ans: 645.4789

17) The floor of a room is 3.50m by 4.50m. The room height is 2.4m. The air has a relative humidity of 75% and a temperature of 18°C. How much water vapor is there in this air? (Maximum humidity at 18°C is 15.4 g/m^3.)

Solution:

$\varphi_{Max} = 15.4\ \text{g/m}^3$

$\varphi_{rel} = 75\%$

$$\varphi_{rel} = \frac{\varphi_{abs} \times 100\%}{\varphi_{Max}}$$

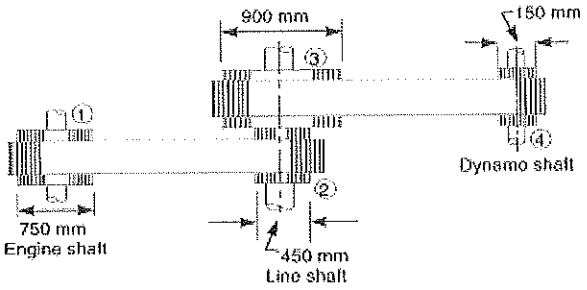
$\varphi_{abs} = \frac{15.4 \times 75}{100} = 11.55\ \text{g/m}^3$

$V = l \times b \times h = 37.8\ \text{m}^3$

Ans: Amount of water vapour = $11.55 \times 37.8 = 436.59$ gm

18) An engine run at 150 rpm drives a line shaft by means of a belt. The engine pulley is 750mm diameter and pulley of line shaft 450 mm. A 900 mm diameter pulley on a line shaft drives a 150 mm diameter pulley keyed to dynamo shaft. Find the speed of dynamo shaft. When 1. there is no slip 2 there is slip of 2% at each drive.

Solution:



When no slip

$$\frac{N_4}{N_1} = \frac{d_1 \times d_3}{d_2 \times d_4} \quad \text{or} \quad \frac{N_4}{150} = \frac{750 \times 900}{450 \times 150} = 10$$

Ans: 1500 rpm

With slip

$$\frac{N_4}{N_1} = \frac{d_1 \times d_3}{d_2 \times d_4}\left(1 - \frac{s_1}{100}\right)\left(1 - \frac{s_2}{100}\right)$$

$$\frac{N_4}{150} = \frac{750 \times 900}{450 \times 150}\left(1 - \frac{2}{100}\right)\left(1 - \frac{2}{100}\right) = 9.6$$

Ans: 1440 rpm

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School of Woodworking Skill

Session: 2019-20 (Summer / Winter Semester) (Solution)

B. Voc. / M. Voc. Program, 5th Semester,

End-Sem. Examination

Course Code: SC1505 **Time: 2 Hours**

Course Name: Advance Carpenter Mathematics (Set B) **Max. Marks: 50**

Instruction: (if any) Scientific calculator is permitted.

Section – A

10X01 = 10 Marks

1) Which one of the following is used for measuring the central tendency of data:

a) Scale b) Population c) Median d) None of these.

2) The mixture of a number of gases by volume in the air is known as

a) Dry air b) Moist air c) Saturated air d) None of these.

3) The ratio of the actual specific humidity to the specific humidity when the air is saturated at the same dry bulb temperature is called

(a) Humidity ratio (b) Relative humidity (c) Absolute humidity (d) Degree of saturation

4) The moisture content of wood product generally lies between:

(a) 8-25% (b) 20-45% (c) 60-80% (d) Depends on climatic conditions

5) The oak wood has a mass of 134 kg and a volume of 194 dm3 What is the density?

(a) 1.44 kg/dm3 (b) 0.69 kg/dm3 (c) 0.89 kg/dm3 (d) 1.34 kg/dm3

6) Which of the following is not used for transmitting power:

a) Belt drive b) Chain drive c) Gear drive d) Electric Motor.

7) A moulder motor makes 2920 rpm. The working shaft has a pulley of 156mm diameter and should run at 4500 rpm. How big does the pulley on the engine have to be?

a) 241.41 b) 156.23 c) 141.46 d) 200.21

8) Power is transmitted by belt is dependent on ....

a) Velocity b) Tension c) Contact of pulley and belt d) All of these

9)) EOQ is

(a) Enterprise order quantity (b) Enterprise order quality (c) Economic order quantity (d) Economic order quality

10) Total capital investment refers to

a) Total saving b) Money invested c) Total earnings d) None

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Section – B

04X04 = 16 Marks

11) Write short notes on: a) Material Requirement Planning b) Specific and Relative humidity.

Solution:

(a) Material Requirements Planning is primarily related to the inventory of raw materials and components which are required to produce the products in a facility. Their demand is usually termed as secondary demand that totally depends upon the demand of finished product. MRP is a time phased priority-planning technique that estimates material requirements and schedules supply to meet demand across all products and parts in one or more plants. Now- a- days, information technology plays a major role in designing and implementing Material Requirements Planning systems and processes as it provides information about manufacturing needs (linked with customer demand) as well as information about inventory levels.

(b) Specific Humidity: It is the mass of water vapour present in 1 kg of dry air, and is generally expressed in terms of gram per kg of dry air (g/kg of dry air). It is also called specific humidity or humidity ratio. Relative humidity: It is the ratio of actual mass of water vapour in a given volume of moist air to the mass of water vapour in the same volume of saturated air at the same temperature and pressure. It is briefly written as RH(φ).

12) What are the principles of Just In Time techniques?

Solution:

a) Elimination of waste: Any activity that does not add value to the product or service in the eyes of the customer is a waste. Poor product design such as the inclusion of fancy functions not required by the customer is a waste. A product design causing difficulty in manufacturing is a waste. Standardization reduces the planning and control efforts.

b) Waste of overproduction: Overproduction is the production of goods more than what are immediately needed. Overproduction causes extra material handling, quality problems, and unnecessary inventories.

c) Waste of waiting: A material waiting in queue is a waste. An operator waiting for material or instruction and having no productive work to do is a waste.

d) Waste of movement: Poor plant layout results in materials having to be moved extra distances and cause unnecessary material handling costs. Work centers should be close to each other in order to reduce the move distance.

e) Waste of motion: Improper methods of performing tasks by the operators cause wasted motions. Reaching far for materials or machine buttons is a waste of motion. Searching for tools is a waste of motion. Any activity that does not add value to the products should be eliminated. Bad layout or training causes waste of motion.

f) Waste of process itself: Bad process design is a waste. For example, wrong type or size of machines, wrong tools, and wrong fixtures are wastes.

13) Air at a temperature of 85°C, contains an absolute humidity of 210 g/m^3. what is the relative humidity of air? (Maximum humidity at 85C is 353 g/m^3)

Solution:

$$\varphi_{rel} = \frac{\varphi_{abs} \times 100\%}{\varphi_{Max}}$$

$$\frac{100\ \% \cdot 210\ g/m^3}{353\ g/m^3} = 59.49...\ \%$$

Ans: 59.49 %

14) The motor of a circular saw runs at 1460 rpm. The engine pulley has a diameter of 180 mm. The diameter of the pulley at the circular saw is 150 mm. a) What speed does the circular saw shaft reach? b) What is the drive ratio?

Solution:

$$n_2 = \frac{d_1 n_1}{d_2} = \frac{180 \times 1460}{150} = 240.41$$

$$i = \frac{n_2}{n_1} = \frac{2500}{1460} = 1.714$$

Ans: 240.41 rpm and 1.714

Section – C

04X06 = 24 Marks

15) Explain the influence of moisture content in wood?

Solution:

Wood is a material that continually absorbs or releases moisture until it reaches a balance with its surroundings. In normal use the moisture content of wood varies between 8% and 25% by weight, depending on the relative humidity of the air. On the other hand, an excess of moisture in wood can cause other problems, including, but not limited to: Preventing adhesives from making a secure bond (Less strength) and Shrinkage as the excess moisture leaves the wood:

Shrinkage occurs as moisture content decreases, while swelling takes place when it increases. Volume change is not equal in all directions. The greatest dimensional change occurs in a direction tangential to the growth rings. Shrinkage from the pith outwards, or radially, is usually considerably less than tangential shrinkage, while longitudinal (along the grain) shrinkage is so slight as to be usually neglected. The longitudinal shrinkage is 0.1% to 0.3%, in contrast to transverse shrinkages, which is 2% to 10%. Tangential shrinkage is often about twice as great as in the radial direction, although in some species it is as much as five times as great. The shrinkage is about 5% to 10% in the tangential direction and about 2% to 6% in the radial direction.

16) The following table gives the life time of in hours of 400 fitting tubes of certain make. Find the mean lifetime of the fitting pipes.

Life time in hr	No. of tubes
Less than 300	0
Less than 400	20
Less than 500	60
Less than 600	116
Less than 700	194
Less than 800	265
Less than 900	324
Less than 1000	374
Less than 1100	392
Less than1200	400

Solution:

Computations of Arithmetic Mean

Class intervals X	Frequeney (f)	mid-value $(m.v) = m$	Deviatons from (749.5)	Step Deviation (100) dx/i	fdx
300—399	20	349.5	—400	—4	— 80
400 499	40	449.5	—300	—3	—120
500—599	56	549.5	—200	—2	—112
600—699	78	649.5	—100	—1	— 78
700—799	71	749.5	0	0	0
800—899	59	849.5	100	1	59
900—999	50	949.5	200	2	100
1,000—1,099	18	1,049.5	300	3	54
1,100—1,199	8	1,149.5	400	4	32
	$N = 400$				$\Sigma fdx = -145$

$$X = A + \frac{\Sigma fx}{N} \times i)$$

$$\bar{X} = 749.5 + \left(\frac{-145}{400} \times 100 \right) = 713.25 \text{ hours}$$

Ans: Mean life is 713.25

17) Air with a temperature of 18°C and a relative humidity of 70% must cool to 8°C.

a) at what temperature is the dew point reached?

b) how much condensation occurs per m3 of air at 8°C.

(Maximum humidity at 18°C and 8°C is 15.4 g/m^3 and 8.27 g/m^3, respectively).

Solution:

Absolute humidity:

$$\varphi_{abs} = \frac{\varphi_{max} \times rel}{100\%}$$

From table Maximum humidity at 18°C and 8°C is 15.4 g/m^3 and 8.27 g/m^3, respectively

a) $$f_{abs\ 18°C} = \frac{f_{sät\ 18°C} \cdot \phi}{100\ \%} \rightarrow \frac{15.4\ g/m^3 \cdot 70\ \%}{100\ \%} = 10.78\ g/m^3$$

From table temperature at 10.78 g/m3 is 12 °C (Approximately)

b) $$Kf_{abs\ 8°C} = f_{abs\ 18°C} - f_{sät\ 8°C} \rightarrow 10.78\ g/m^3 - 8.27\ g/m^3 = 2.51\ g/m^3$$

Ans : (a) 12 °C b) 2.51 g/m^3.

18) A fixed asset having a useful life of 3 years is purchased on 1 January 2013. Cost of the asset is $2,000 whereas its residual value is expected to be $500. Calculate depreciation expense for the years ending 30 June 2013 and 30 June 2014.

Solution:

Calculate depreciation expense for the years ending 30 June 2013 and 30 June 2014.

Depreciation expense per annum shall be: = ($2000 – $500)/ 3 years = $500 p.a.

Depreciation expense for the year ended 30 June 2013:

Ans: $500 x 6/12 = $250

As $500 calculated above represents the depreciation cost for 12 months, it has been reduced to 6 months equivalent to

reflect the number of months the asset was actually available for use.

Depreciation expense for the year ended 30 June 2014:

Ans: $500 x 12/12 = $500

As the asset was available for the whole period, the annual depreciation expense is not apportioned

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Registration No.: .....

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Set-A

Course Code: SCS1506 **Time: 3 Hours**

Course Name: CAD 3D Drawing **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is not the product of PYTHA?

a) Drawings b) C Language Scripts

c) Nesting d) Part List

Q.2 Which one of the following is used to move an edge of a Cuboid?

a) Tool 1 b) Face Tool

c) Edge Tool d) Tool 2

Q.3 Where we can change the line thickness for Wire frame model production?

a) Project setting b) Tool 1

c) Edge Tool d) Tool 2

Q.4 Which one of the following is the short key for Sphere function?

a) Alt+S b) S

c) Ctrl+S d) Shift+S

Q.5 Which one of the following is the short key for Ring function?

a) R b) I

c) Ctrl+R d) Shift+I

Q.6 Which one of the following is the short key for Tube function?

a) U b) Shift+U

c) Ctrl+T d) T

Q.7 Which one of the following is the short key for Cone function?

a) O b) C

c) Ctrl+O d) Ctrl+C

Q.8 Which one of the following is the short key for Copy function?

a) O b) C

c) Ctrl+C d) Shift+C

Q.9 Which one of the following function is toggled on/off by F5 key?

a) Axonometry
b) 4 views
c) Solid
d) Zoom

Q.10 Which one of the following function is toggled on/off by F6 key?

a) Axonometry
b) 4 views
c) Zoom
d) Solid

Section – B

04X04 = 16 Marks

Q.11 Define basic need of part list creation and also define any four advantages.

Q.12 Define parametric tab and why we are using reference point in drawing.

Q.13 What is 3D modelling and specify its four advantages?

Q.14 Define Project Header and list out any six inputs from PYTHA dialog window.

Section – C

01X06 = 06 Marks

Q.15 Explain Following –

a) Menu Bar
b) Icon Bar
c) Graphics Bar
d) Input Prompt
e) Title Bar
f) Project Setting

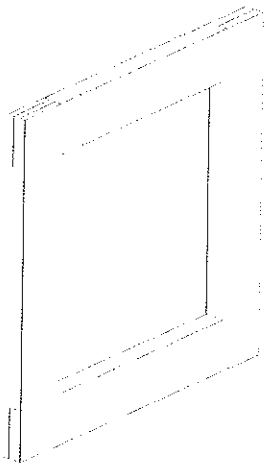
Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in workspace mode and generate the output file by inserting this file in print tool.

Q.17 Draw all required possible views and show details of a Frame with following aspects-

a) Length – 400
b) Depth – 24
c) Height – 400
d) Wood material thickness – 60 mm x 24 mm.
e) Note:
   - Each corner has wooden Joinery.
   - Left Side Top & Bottom Corner – Corner Bridle Joint
   - Right Side Top & Bottom Corner – Half Lap Joint



(For Your Reference)

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer Key

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Set-A

Course Code: SCS1506 **Time: 3 Hours**

Course Name: CAD 3D Drawing **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is not the product of PYTHA?

a) Drawings b) C Language Scripts

c) Nesting d) Part List (b)

Q.2 Which one of the following is used to move an edge of a Cuboid?

a) Tool 1 b) Face Tool

c) Edge Tool d) Tool 2 (c)

Q.3 Where we can change the line thickness for Wire frame model production?

a) Project setting b) Tool 1

c) Edge Tool d) Tool 2 (a)

Q.4 Which one of the following is the short key for Sphere function?

a) Alt+S b) S

c) Ctrl+S d) Shift+S (b)

Q.5 Which one of the following is the short key for Ring function?

a) R b) I

c) Ctrl+R d) Shift+I (b)

Q.6 Which one of the following is the short key for Tube function?

a) U b) Shift+U

c) Ctrl+T d) T (d)

Q.7 Which one of the following is the short key for Cone function?

a) O b) C

c) Ctrl+O d) Ctrl+C (a)

Q.8 Which one of the following is the short key for Copy function?

a) O b) C

c) Ctrl+C d) Shift+C (c)

Q.9 Which one of the following function is toggled on/off by F5 key?

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a) Axonometry b) 4 views

c) Solid d) Zoom (b)

Q.10 Which one of the following function is toggled on/off by F6 key?

a) Axonometry b) 4 views

c) Zoom d) Solid (a)

Section – B

04X04 = 16 Marks

Q.11 Define basic need of part list creation and also define any four advantages.

Ans. Parts list also known as a bill of materials (BOM). It is a tabular list of the items used to make an project. Parts list is usually combined with the assembly drawing, but it is a separate and individual document and can be and provides a complete list of all parts needed to build the complete project. The PYTHA part list compares the parts and groups in a project to each other and analyzes this information in a table. Thereby, elements with the same properties are added. As soon as at least one of its attributes differs from others, the respective part will be listed individually. You can define freely which part properties shall be compared (e.g. the name, article number, the part's dimensions, material etc.). In order to do so, all the attributes, as well as the dimensions, are read out the current project and are therefore always up-to-date with the construction.

Advantages:

a) Time saving while drawing reading
b) Easy material calculation for nesting
c) Tabular detail of material attributes
d) Less chance of having mistaken in terms of final cutting

Q.12 Define parametric tab and why we are using reference point in drawing.

Ans. Parametric tab is used to adjust the objects dimensions while they are loaded, i.e. they are extended or shortened. This means that you can manage parts which have different widths and heights in one project. You only need to construct them one time and save them with Parametric. Typical examples of use are cabinet corpuses, windows, doors etc., which do always have the same construction, but appear in different dimensions.

The Parametric works similar to the functions "Extend" and "Change dimension". All parts of the imported project are extended according to your settings (not stretched- that would not be reasonable). You can activate the "Parametric" function in the dimensioning menu.

Reference Points is extremely important for the work with libraries can be used to align drawings when you overlay them or assemble them for 3D. They can also be used as a means for assuring an exact placement when you merge two drawings together.

Q.13 What is 3D modelling and specify its four advantages?

Ans. It is used to create virtual three dimensional model of some physical object. A 3D CAD model includes not only x and y coordinates, but also the Z coordinate. A simple 3-D model is a wire frame model consisting only the lines, circles and curves. 3D modelling is used in various industries including video games, 3D printing, computer aided design and manufacturing.

Advantages -

1. Work efficiently and save time.
2. Execute control and accuracy – In 3D model accuracy can be maintained and each component of the product measured and analyzed separately.
3. Avoid costly mistakes-In 3D modelling any flaws can be corrected before finalizing the product thus it avoids costly mistakes.
4. Better for marketing and product approval.

Q.14 Define Project Header and list out any six inputs from PYTHA dialog window.

Ans. For every project we need to give some detail to show on drawings. These details can be as the project name, the customer's name as well as their contact details, the delivery date etc. can be saved. Once it has been saved, this information can automatically be accessed by the parts list, the title block of the plotting sheet as well as the label printing and the DXF export functions of the PYTHA workshop. Changes, if necessary, need to be applied once only, in the project header.

The project header offers ten customizable lines that can be renamed to match your requirements. This means that not only the input in the according dialogue fields can be selected freely, also the names of the fields can be changed. For example, the field "Project" could be renamed into "Assignment", the line "email" into "Customer number" etc.

a) Project Name
b) Customer Name
c) Company Name
d) Delivery date
e) Email
f) Address

Section – C

01X06 = 06 Marks

Q.15 Explain Following –

a) Menu Bar b) Icon Bar c) Graphics Bar
d) Input Prompt e) Title Bar f) Project Setting

Ans.

a) **Menu Bar** – This menu bar are located in the head board of PYTHA interface. This bar contains a pull down menus and these menu contains all available program functions.
b) **Icon Bar** – This icon bar are located in the head board of PYTHA interface. Headboard gives quick aces via icons to all main menus. The icons are grouped in containers according to their functionality which we can move in desktop.

c) **Graphics Bar** – The graphics bar contains similar to the icon bar buttons on head board. By this bar we can control 3D view of your scene with respect to model. It contains as XY, YZ, ZX, Axo, Persp, Zoom and Edge view.

d) **Input Prompt** – If you select a tool or function, then we need to feed some measurements and values for desired application. Then we use input prompt to feed these values.

e) **Title Bar** – If PYTHA dongle is plugged in correctly, then central's will show some details in addition on top header. These details contain, customer name, file name and dongle no.

f) **Project Setting** – Here we can select the required measuring unit (mm, cm, m, inches) for your project. We can define scale values for printing output. We can configure the layers as per requirement with draw attributes.

Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in workspace mode and generate the output file by inserting this file in print tool.

Q.17 Draw all required possible views and show details of a Frame with following aspects-

a) Length – 400

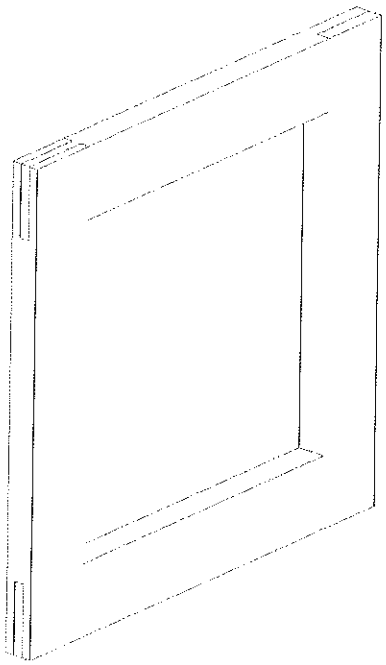
b) Depth – 24

c) Height – 400

d) Wood material thickness – 60 mm x 24 mm.

e) Note:

- Each corner has wooden Joinery.
- Left Side Top & Bottom Corner – Corner Bridle Joint
- Right Side Top & Bottom Corner – Half Lap Joint



(For Your Reference)

Ans. Refer Attachment 1 & 2 For question 16 & 17.

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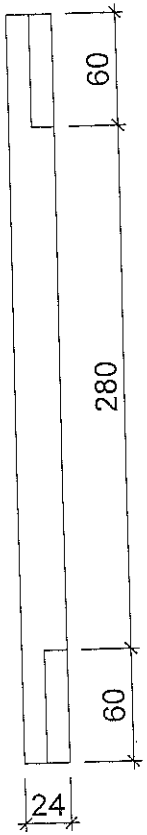
Project no:	XXXXXXXXXXXXX		Drawn By:	Checked By:
Course Name:	xxxxxxxxxxxxxxxxxxxxxxxxx	Date	xx-xx-xxxx	xx-xx-xxxx
Course Code:	xxxxxxxxxxxxxxxxxxxxxxxxx	Name	XXXXXXX	XXXXXXX
Semester:	xxxxxxxxxxxxxxxxxxxxxxxxx	Reg. No./ID	XXXXXXX	XXXXXXX

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

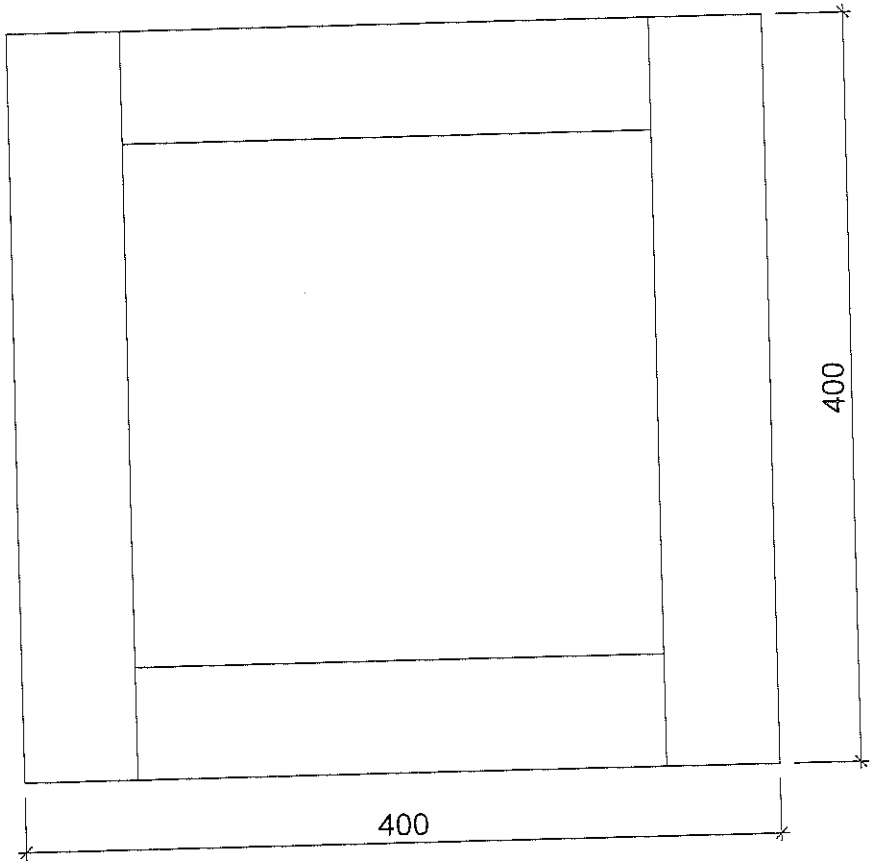
BSDU

Woodworking

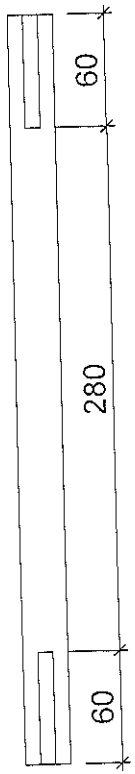
Side View



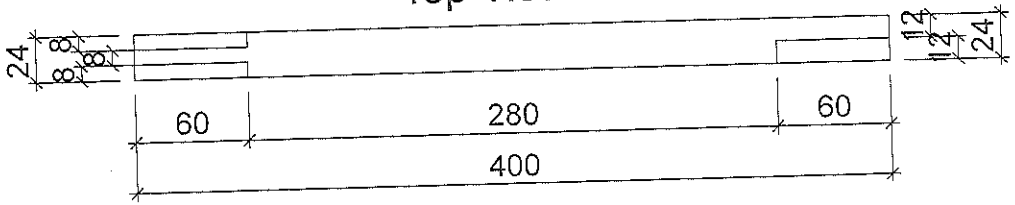
Front View



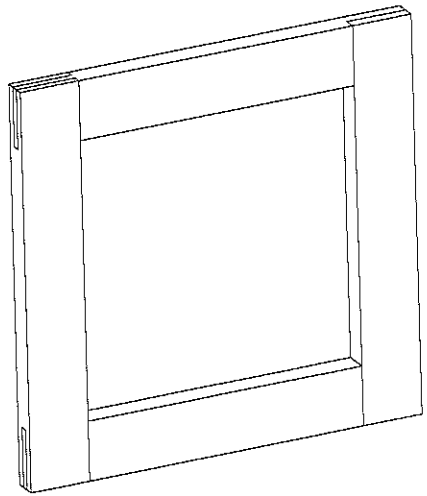
Side View



Top View



Axonometry View



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Set-B

Course Code: SCS1506 **Time: 3 Hours**

Course Name: CAD 3D Drawing **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is not from Parts function?

a) Cone b) Cylinder

c) Cube d) Auxiliary Line

Q.2 Which one of the following is the short key for Rotate function?

a) Shift+R b) Ctrl+R

c) R d) Alt+R

Q.3 Which one of the following is the short key for Copy function?

a) Alt+C b) C

c) Ctrl+C d) Shift+C

Q.4 Which one of the following is the short key for Delete function?

a) Shift+D b) D

c) Alt+D d) Ctrl+D

Q.5 Which one of the following is the short key for Sphere function?

a) Alt+S b) S

c) Ctrl+S d) Shift+S

Q.6 Which one of the following is the short key for Ring function?

a) R b) I

c) Ctrl+R d) Shift+I

Q.7 Which one of the following is the short key for Cube function?

a) Ctrl+Q b) C

c) Q d) Ctrl+C

Q.8 Which one of the following is the short key for Tube function?

a) U b) Shift+U

c) Ctrl+T d) T

Q.9 Which one of the following is the short key for Cone function?

b) C

c) Ctrl+O

d) Ctrl+C

Q.10 Which is not a unit of length measurement_____?

(a) Yards

(b) Millimeter

(c) Grads

(d) Microns

Section – B

04X04 = 16 Marks

Q.11 Define generators and workshop tool in PYTHA.

Q.12 Define Part Menu and explain any two standard shapes.

Q.13 What do you understand by CAD and how CAD improves productivity in wood working?

Q.14 Explain vertex, edge and face with neat sketch.

Section – C

01X06 = 06 Marks

Q.15 Define the need of Auxiliary lines in PYTHA, and list out any six-line parameter from Auxiliary Menu.

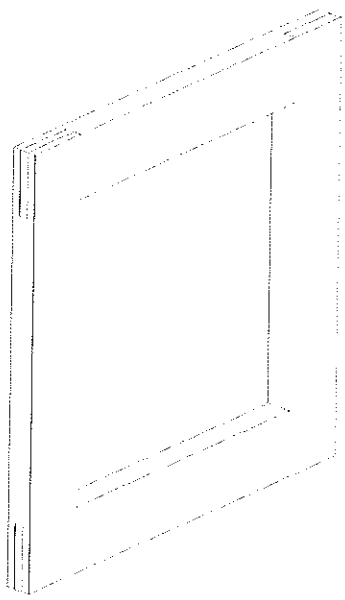
Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in workspace mode and generate the output file by inserting this file in print tool.

Q.17 Draw all required possible views and show details of a Frame with following aspects-

a) Length – 400
b) Depth – 24
c) Height – 400
d) Wood material thickness – 60 mm x 24 mm.
e) Note:
   - Each corner has wooden Joinery.
   - Left Side Top & Bottom Corner – Corner Bridle Joint
   - Right Side Top & Bottom Corner – Half Lap Joint



(For Your Reference)

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer Key

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 5th Semester,

End-Sem. Examination

Set-B

Course Code: SCS1506 **Time: 3 Hours**

Course Name: CAD 3D Drawing **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is not from Parts function?

a) Cone b) Cylinder

c) Cube d) Auxiliary Line (d)

Q.2 Which one of the following is the short key for Rotate function?

a) Shift+R b) Ctrl+R

c) R d) Alt+R (b)

Q.3 Which one of the following is the short key for Copy function?

a) Alt+C b) C

c) Ctrl+C d) Shift+C (c)

Q.4 Which one of the following is the short key for Delete function?

a) Shift+D b) D

c) Alt+D d) Ctrl+D (d)

Q.5 Which one of the following is the short key for Sphere function?

a) Alt+S b) S

c) Ctrl+S d) Shift+S (b)

Q.6 Which one of the following is the short key for Ring function?

a) R b) I

c) Ctrl+R d) Shift+I (b)

Q.7 Which one of the following is the short key for Cube function?

a) Ctrl+Q b) C

c) Q d) Ctrl+C (c)

Q.8 Which one of the following is the short key for Tube function?

a) U b) Shift+U

c) Ctrl+T d) T (d)

Q.9 Which one of the following is the short key for Cone function?

b) C

c) Ctrl+O

d) Ctrl+C (a)

Q.10 Which is not a unit of length measurement_____?

(a) Yards

(b) Millimeter

(c) Grads

(d) Microns (c)

Section – B

04X04 = 16 Marks

Q.11 Define generators and workshop tool in PYTHA.

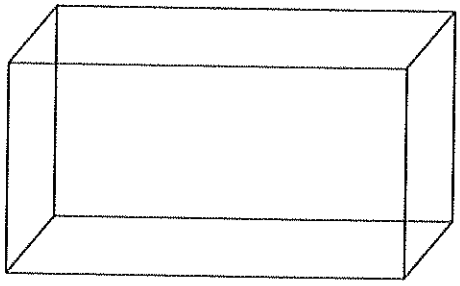
Ans. In generator menu, you will find generators with which you can generate cabinets, drawers, fronts and lower shelves by simply entering the dimensions. PYTHA offers generators that will ease and speed up the construction or current standard piece of furniture. Every adjustment in the generator windows can be seen in construction area immediately. In addition, you can change the views, zoom onto details etc. without having to close the generator windows. After you selected the necessary generator, the according dialogue window is opened. The necessary settings are made in input fields or pull – down menu respectively, and the dialogue is closed with "OK" button.

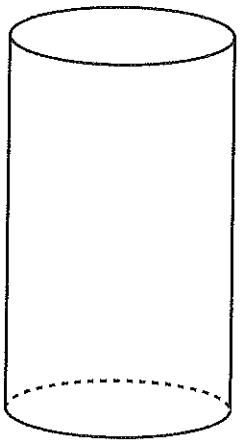
PYHTA workshop provides a set of tools that help you to easily and efficiently prepare any 3D construction for the production process. Workshop includes tools used to edit edges – banding and routing, a label printer including barcode and nesting cutting optimization.

Q.12 Define Part Menu and explain any two standard shapes.

Ans. Parts are three-dimensional objects in PYTHA which can be constructed in various ways. For objects with a predefined shape as block, cylinder, sphere, etc. you only enter the measurements. Objects with a free shape as profiles, rotational sweeps, freeform objects, etc. are derived from two-dimensional cross-sections.

1. **Block** - The block is of the parts most frequently used. He can be created in any user-defined measurements by any length, depth and height. Its edges run parallel to the coordinate axes. The major point (initial point) is used to define its position in the three dimensional space.





2. The Cylinder - The cylinder is the most frequently used rotational symmetric object. Its axis can be parallel to one of the three axes among X, Y, Z or go through two existing points. The degree of segmentation (number of segments and number of partitions) of a cylinder can be freely chosen.

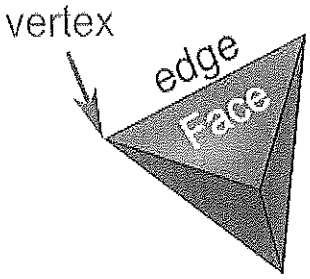
Q.13 What do you understand by CAD and how CAD improves productivity in wood working?

Ans. Auto CAD is a computer added design and drafting software used in architecture, construction and manufacturing to prepare engineering drawing in terms of 2D and 3D by electronic method. This CAD is time saving process to drawing. Saved file we can transfer easily where we want by electronic method. It is also easy in PDF file which they can open to view and print.

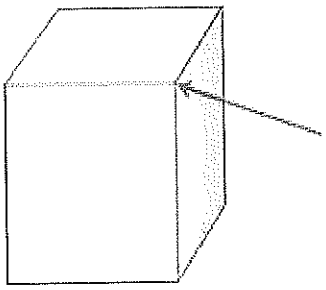
CAD offers time saving process in drawing. As per high technology we can draft a drawing with help of different predefined library from this library we can use a lots of shapes, material, accessories of joinery etc. We can also set a template file in which we can fix our all drawing settings as well as some materialistic objects. Saved file we can transfer easily where we want by electronic method. It is also easy in PDF file which they can open to view and print.

Q.14 Explain vertex, edge and face with neat sketch.

Ans. A solid figure can be defined by the number and combination of certain parts as – Faces, Edges, Vertex. A vertex is a **point** where two or more line segments meet, it will be a corner or end and start of lines. For any geometrical shape an **edge** is a line segment on the boundary joining one vertex (corner point) to another. A **face** is any of the individual flat surfaces of a solid object.



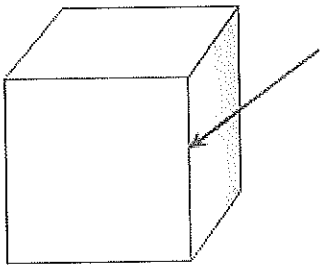
Vertex - A vertex is a point where several planes meet in a point. The arrow here is pointing to a vertex of this cube. Many solids have more than one vertex. A point is defined by its coordinates in a right-handed, orthogonal, Cartesian coordinate system in X, Y and Z direction.



Edges - An edge is the line segment where two faces meet. The arrow here is pointing to a edge of this cube that the faces intersect in a line. Many solid figures have more than one edge. Edges are one dimensional geometric objects. They are not only connecting their initial- and endpoint, they also connect two neighboured faces. PYTHA has two types of edges - the "natural" and the "artificial" edge.

Natural edges are created where a face forms or two faces are connected to each other. Artificial edges have no direct connection to faces, they are created manually by the user and are used as e.g. a grid, hatch or as a 2D ornament on a face.

Faces - A face is any kind of plane shape mean by any closed, flat, two-dimensional shape. The arrow here is pointing to a face of this cube. All plane shapes have a face, because you can trace the shape of all plane shapes. The flat surface that makes the front of this cube is called a face. Many solid figures have more than one face. Faces are two dimensional geometric objects. Faces are only defined by the numbers of their sides and by their orientation.



e.g. A triangle has a triangle face, a rectangle has a rectangle face, a diamond has a diamond face and a circle has a circle face.

Section – C

01X06 = 06 Marks

Q.15 Define the need of Auxiliary lines in PYTHA, and list out any six-line parameter from Auxiliary Menu.

Ans. For 2D construction and for the support of the 3D Modelling PYTHA offers you auxiliary lines. These are much easier tools to use. The functioning is similar to constructing at a drafting board, with thin pencil lines (the auxiliary lines) you draft the object and trace it. Tracing the auxiliary lines you directly create common PYTHA objects like chains of edges, faces or 3D parts. With the help auxiliary lines you can also produce points of intersection.

PYTHA auxiliary lines are a virtual drawing board that, aside from **lines** and circles, features all types of geometric constructions such as subdivision of angles, perpendicular and vertical center **line**, parallel, tangent and circles constructed within the parameters of two tangents.

Lines created in Auxiliary lines menu have an infinite length, circles have no segments but are real round circles. There are no isolated points but only points of intersection of two elements or as centers of arcs.

When drawing a new element, the points of intersection of the new element with all existing elements are calculated. If you delete an element, the points of intersection are also deleted.

Types of Auxiliary Lines –

a) Horizontal
b) Vertical
c) Line + Angle
d) Parallel
e) Equidistant
f) Circle

Section – D

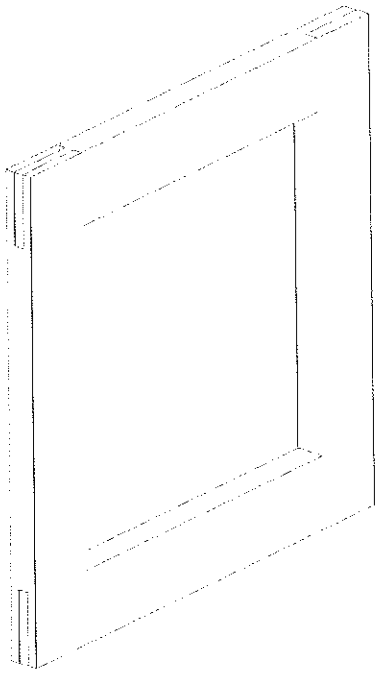
02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in workspace mode and generate the output file by inserting this file in print tool.

Q.17 Draw all required possible views and show details of a Frame with following aspects-

a) Length – 400
b) Depth – 24
c) Height – 400
d) Wood material thickness – 60 mm x 24 mm.
e) Note:
    - Each corner has wooden Joinery.

- Left Side Top & Bottom Corner – Corner Bridle Joint
- Right Side Top & Bottom Corner – Half Lap Joint



(For Your Reference)

Ans. Refer Attachment 1 & 2 For question 16 & 17.

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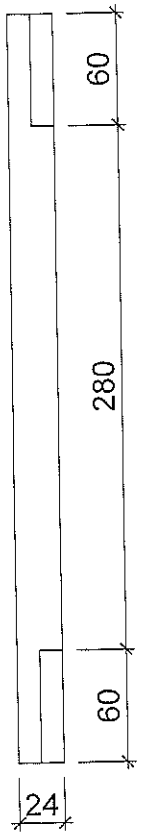
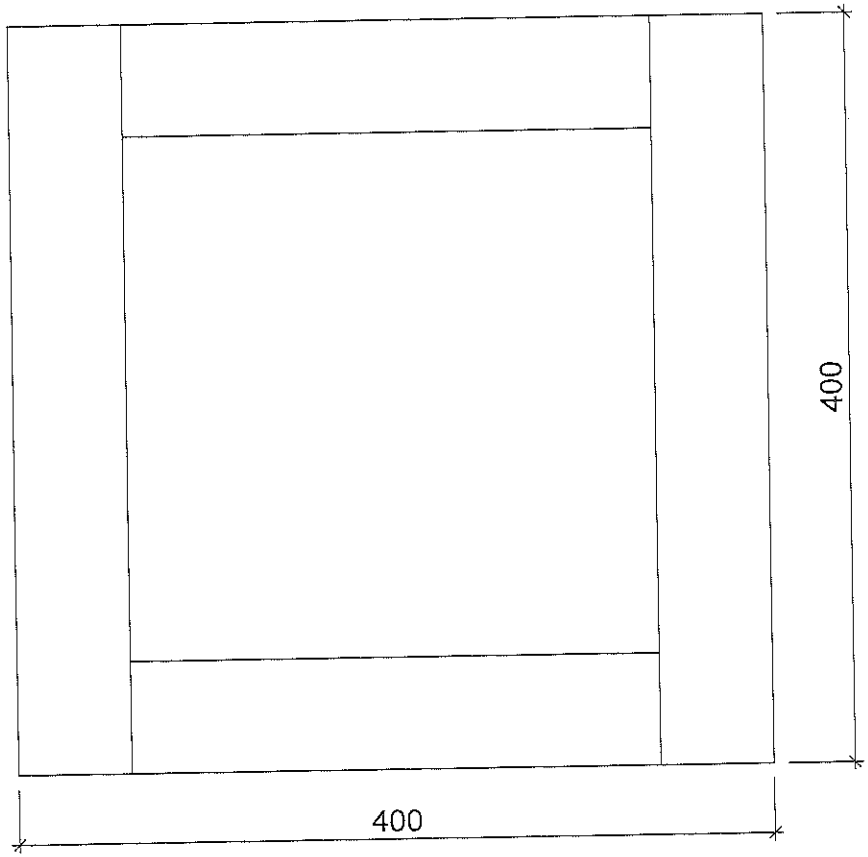
Project no:	XXXXXXXXXXXXX		Drawn By:	Checked By:	
Course Name:	xxxxxxxxxxxxxxxxxxxxxxxxxxx	Date	xx-xx-xxxx	xx-xx-xxxx	
Course Code:	xxxxxxxxxxxxxxxxxxxxxxxxxxx	Name	XXXXXXX	XXXXXXX	
Semester:	xxxxxxxxxxxxxxxxxxxxxxxxxxx	Reg. No./ID	XXXXXXX	XXXXXXX	

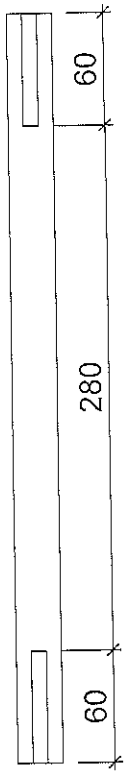
Side View



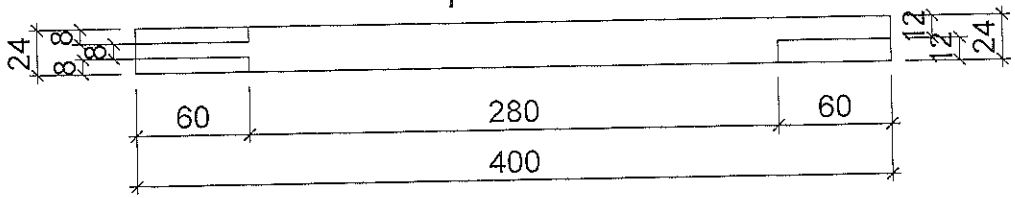
Front View



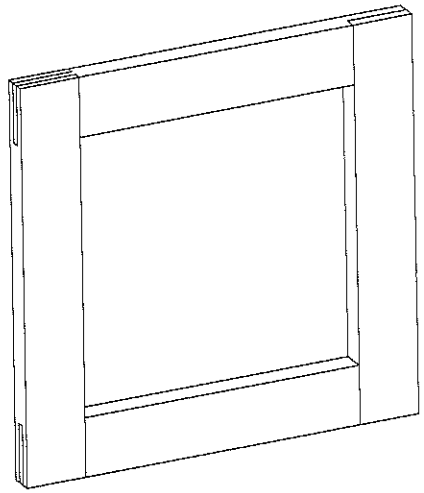
Side View



Top View



Axonometry View



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 3rd Semester,

End-Sem. Examination

Set-A

Course Code: GEN1305 **Time: 3 Hours**

Course Name: Elementary Drawing Skills **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 When drawing in 2D, what axis do you not work with?

(a) X (b) Y

(c) Z (d) WCS

Q.2 The default position of the UCS icon is positioned at _____ on the AutoCAD grid.

(a) 0,0,0 (b)10,10,10

(c) 20,20,20 (d) None of the above

Q.3 Which of the following is not a property of an object?

(a) Line weight (b) Line type

Q.4 What you cannot create from the command Offset?

(a) Vertical straight (b) Concentric circles

(c) Three parallel lines (d) Parallel arcs

Q.5 By what symbol shows the snap point to the closest point.

(a) with circles and dots in the center (b) With two triangle

(c) With three orthogonal (d) With Diamond

Q.6 What is the minimum allowable number of layers in a drawing?

(a) 0 (b) 5

(c) 2 (d) 1

Q.7 Which is corresponded to zoom mouse wheel?

(a) Zoom in / zoom out (b) Pan & scan

(c) Extents / all (d) Scale

Q.8 Where should you pay attention when you are working with AutoCAD commands?

(a) Drawing area (b) Status bar

(c) Tool bars (d) Command window

Q.9 Polar coordinates are used for drawing_____?

(a) Ellipse (b) Arc

(c) Angular lines
(d) one of the above

Q.10 What is the difference between the Scale command from the command Zoom?

(a) Scale for single object, while the Zoom whole plan

(b) No difference

(c) H Scale changes the size of objects, while the Zoom changes the visibility of the project

(d) H Scale can grow / shrink a shape up 10 times, while the Zoom has no limits

Section – B

04X04 = 16 Marks

Q.11 Discuss any two types of object selection method used in AutoCAD.

Q.12 Write the name of four dimension parameters with their short key.

Q.13 Write any four differences between Artistic drawing & Engineering drawing.

Q.14 Write two differences between Line & Polyline with short key. Explain the conversion of a line object into polyline object.

Section – C

01X06 = 06 Marks

Q.15 Explain the followings tool and also mention their short key used in AutoCAD.

(a) Hatch
(b) Offset
(c) Join
(d) Break
(e) Fillet
(f) Chamfer

Section – D

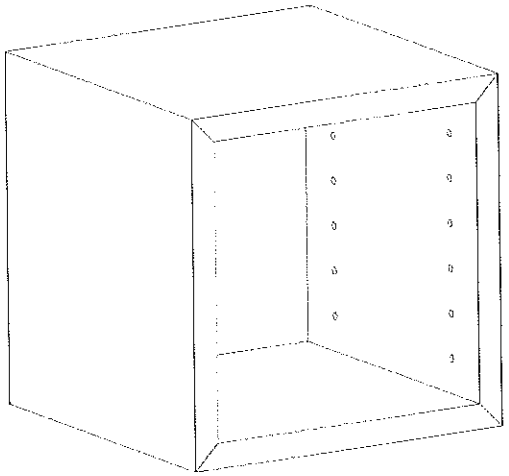
02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in layout mode.

Q.17 Draw all required possible views and show details of a Box Cabinet with following aspects-

a) Length – 250
b) Depth – 250
c) Height – 250
d) Board material thickness – 18 mm & 8 mm (back wall)
e) Follow 32 hole drilling system for shelves
f) Back wall placement from back edge should be 12 mm
g) 8 mm groove in sides for back wall fixing
h) Diameter of drills is 5 mm & depth 12 mm.
i) Note:
    - All Joints are mitre at corners.
    - Front Top Left Corner – Domino Biscuit Joint
    - Front Top Right Corner – Lamello Biscuit Joint

- Both Front Bottom Left & Right Corner – Lamello Clamex Joint



(For Your Reference)

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer Key

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 3rd Semester,

End-Sem. Examination

Answer key

Set-A

Course Code: GEN1305 **Time: 3 Hours**

Course Name: Elementary Drawing Skills **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

10X01 = 10 Marks

Q.1 When drawing in 2D, what axis do you not work with?

(a) X (b) Y

(c) Z (d) WCS (c)

Q.2 The default position of the UCS icon is positioned at _____ on the AutoCAD grid.

(a) 0,0,0 (b)10,10,10

(c) 20,20,20 (d) None of the above (a)

Q.3 Which of the following is not a property of an object?

(a) Line weight (b) Line type

(c) Hyperlink (d) Measure (d)

Q.4 What you cannot create from the command Offset?

(a) Vertical straight (b) Concentric circles

(c) Three parallel lines (d) Parallel arcs (a)

Q.5 By what symbol shows the snap point to the closest point.

(a) with circles and dots in the center (b) With two triangle

(c) With three orthogonal (d) With Diamond (c)

Q.6 What is the minimum allowable number of layers in a drawing?

(a) 0 (b) 5

(c) 2 (d) 1 (d)

Q.7 Which is corresponded to zoom mouse wheel?

(a) Zoom in / zoom out (b) Pan & scan

(c) Extents / all (d) Scale (a)

Q.8 Where should you pay attention when you are working with AutoCAD commands?

(a) Drawing area (b) Status bar

(c) Tool bars (d) Command window (d)

Q.9 Polar coordinates are used for drawing_____?

(a) Ellipse (b) Arc

(c) Angular lines (d) one of the above (d)

Q.10 What is the difference between the Scale command from the command Zoom?

(a) Scale for single object, while the Zoom whole plan

(b) No difference

(c) H Scale changes the size of objects, while the Zoom changes the visibility of the project

(d) H Scale can grow / shrink a shape up 10 times, while the Zoom has no limits (d)

Section – B

04X04 = 16 Marks

Q.11 Discuss any two types of object selection method used in AutoCAD.

Ans. 1. Implied window selection method – Just click on the left upper corner and drag it down in opposite side, then a default blue window appears at the time of object selection. In this if object is not covered fully, but object will not select by this method.

2. Cross window selection method – Just click on the right upper corner and drag it down in opposite side, then a default green window appears at the time of object selection. In this if object is not covered fully, but object will select by this method.

Q.12 Write the name of four dimension parameters with their short key.

Ans.

S. No.	Dimension Parameter	Short keys
1	Dimension Linear	DLI + Enter
2	Dimension Angular	DAN + Enter
3	Dimension Arc Length	DAR + Enter
4	Dimension Radial	DRA + Enter

Q.13 Write any four differences between Artistic drawing & Engineering drawing.

Ans.

S. No.	Engineering Drawing	Artistic Drawing
1.	These drawings reflect technical information about that object to manufacture.	These drawings reflect feelings, emotions, imagination or scene.
2.	The page is signed to become responsible of the designed objects.	The page is signed to become responsible of the artistic value from the picture.
3.	These drawing have only one interpretation (Means).	These drawing have many interpretation.

4.	Drawings have accurate measurement.	Drawings have no measurement

Q.14 Write two differences between Line & Polyline with short key. Explain the conversion of a line object into polyline object.

Ans.

S. No.	line	Polyline
1	Short Key – L + Enter	Short Key – PL + Enter
2	Line object is multi selective by no. of sides & Line can't be edit	Polyline object is single selective by one entity & It is editable
3	Line object have equal width	Polyline object have equal and unequal width

By the Polyline edit tool, select join function, then select all lines for conversion as required, press enter, and Esc, then all the sides of line object can be convert into polyline object.

Section – C

01X06 = 06 Marks

Q.15 Explain the followings tool and also mention their short key used in AutoCAD.

(a) Hatch
(b) Offset
(c) Join
(d) Break
(e) Fillet
(f) Chamfer

Ans.

(a) Hatch - Repetitive patterns called hatching to fill regions in a drawing for various purpose. In general, used to show of object cutting view by a plane in 2D by different patterns.

Short key - H + Enter

(b) Offset - Used to create concentric circle, parallel lines, and parallel curves at a specified distance. You can offset an object at a specified distance or through a point. After you offset objects, you can trim and extend them as an efficient method to create drawings containing many parallel lines and curves. The OFFSET command repeats for convenience.

Short key - O + Enter

(c) Join - Used to join the end points of linear objects and curved objects. Combines a series of finite linear and open curved objects at their common endpoints to create a single 2D entity.

Short key - J + Enter

(d) Break - Used to erase the part of an object. It breaks the selected object between two points. You can create a gap between two specified points on an object, breaking it into two

objects. BREAK is often used to create space for a block or text. This command can be used to break 2D geometries at one or two points. It is helpful if you want to break a curve at the point of intersection with other curve or if you want to create a gap by breaking a part of the geometry.

Short key - BR + Enter

(e) Chamfer - Used to put a chamfer between two lines. This command can be used to add slant edges to the sharp corners, these slant edges are also called chamfers.

Short key - CHA + Enter

(f) Fillet - Used to put a fillet between two lines of a define radius. This command can be used to add rounded corners to the sharp edges of the geometry, these round corners are also called fillets.

Short key - F + Enter

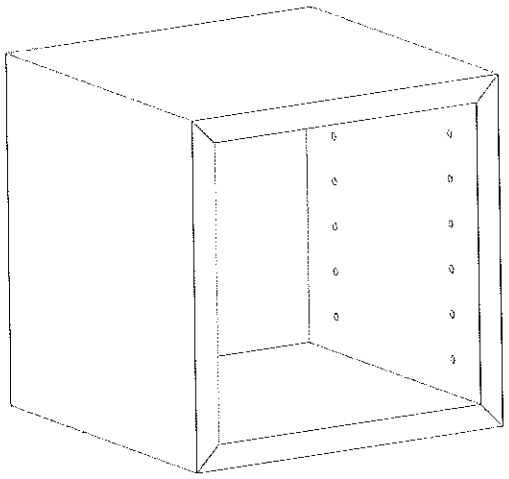
Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in layout mode.

Q.17 Draw all required possible views and show details of a Box Cabinet with following aspects-

a) Length – 250
b) Depth – 250
c) Height – 250
d) Board material thickness – 18 mm & 8 mm (back wall)
e) Follow 32 hole drilling system for shelves
f) Back wall placement from back edge should be 12 mm
g) 8 mm groove in sides for back wall fixing
h) Diameter of drills is 5 mm & depth 12 mm.
i) Note:
    - All Joints are mitre at corners.
    - Front Top Left Corner – Domino Biscuit Joint
    - Front Top Right Corner – Lamello Biscuit Joint
    - Both Front Bottom Left & Right Corner – Lamello Clamex Joint

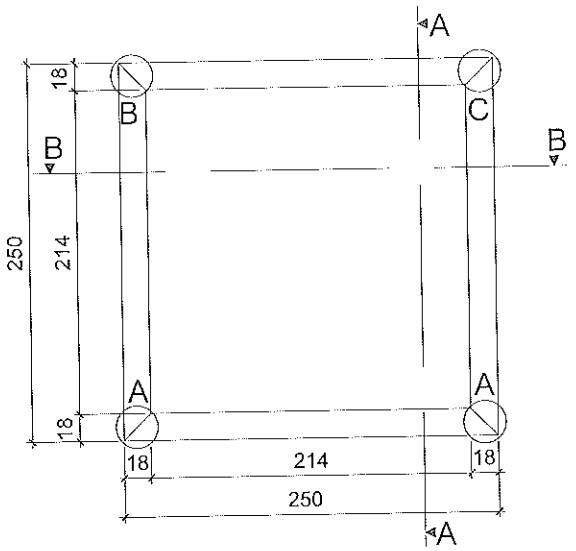


(For Your Reference)

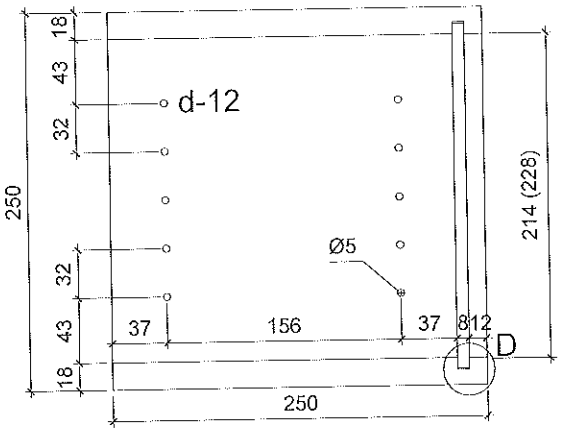
Ans. Refer Attachment 1 & 2 For question 16 & 17.

Project Title:	XXXXXXXXXXXXX	Scale:	X:X (XX)		BHARTIYA SKILL DEVELOPMENT UNIVERSITY BSDU ॥ कौशल भवन सम्पद् ॥ Woodworking
Project no:	XXXXXXXXXXXXX		Drawn By:	Checked By:	
Course Name:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Date	xx-xx-xxxx	xx-xx-xxxx	
Course Code:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Name	XXXXXXX	XXXXXXX	
Semester:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Reg. No./ID	XXXXXXX	XXXXXXX	

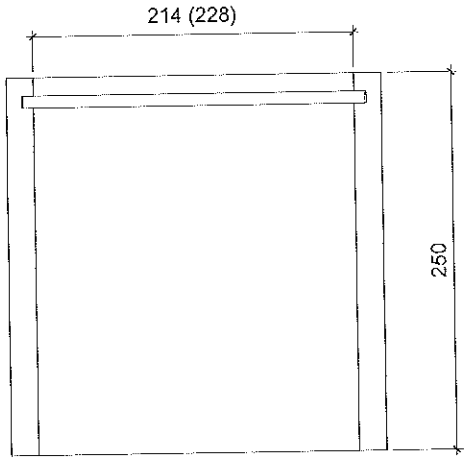
Front view



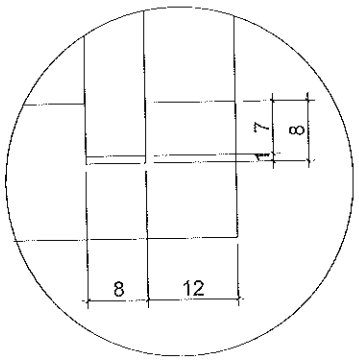
Section A-A



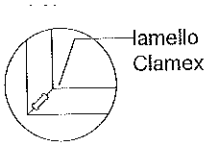
Section B-B



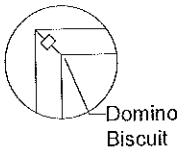
Detail D



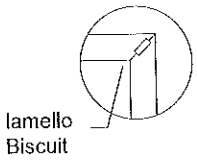
Detail A



Detail B



Detail C



Project Title:	Box Construction	Scale:	1:5 (A4)	
Project no:	Exam_End Sem_01.01		Drawn By:	Checked By:
Course Name:	Elementary Drawing Skills	Date	xx-xx-xxxx	xx-xx-xxxx
Course Code:	GEN1305	Name	XXXXXXX	XXXXXXX
Semester:	3rd Semester	Reg. No./ID	XXXXXXX	XXXXXXX

BHARTIYA SKILL DEVELOPMENT UNIVERSITY
BSDU
॥ कौशल धन सम्पद ॥
Woodworking

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 3rd Semester,

End-Sem. Examination

Set-B

Course Code: GEN1305 **Time: 3 Hours**

Course Name: Elementary Drawing Skills **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

0X01 = 10 Marks

Q.1 Which of the following scales is a reducing scale?

(a) 3:1 (b) 1:3

(c) 1:1 (d) None of the above

Q.2 Which one of the followings term stands for UCS?

(a) User Coordinate State (b) Using Coordinates Screen

(c) User Coordinate System (d) User Coordinate Set

Q.3 When the space is not interpreted as the enter key?

(a) When entering text

(b) When using the PEDIT command

(c) When selecting objects

(d) The space is always an alternative to the enter key

Q.4 Copy command also creates Multiple copies of an object.

(a) True (b) False

(c) Both conditional (d) None of these

Q.5 Which key is used to obtain properties palette in AutoCAD?

(a) Ctrl + 1 (b) Ctrl + 2

(c) Ctrl + 3 (d) Ctrl + 8

Q.6 To obtain parallel lines, concentric circles and parallel curves _____ is used.

(a) Copy (b) Fillet

(c) Offset (d) None of the Above

Q.7 What are the Advantages of AutoCAD?

(a) Improve the quality of designs

(b) Increase the productivity of the designer

(c) Creates drawings with accuracy and quickly

(d) All of the above

Manish Kumar

Q.8 Which of the following workspaces are available in AutoCAD?

(a) 3D basics (b) 3D modelling

(c) Drafting and Annotation (d) All of the above

Q.9 Which is not a unit of length measurement_____?

(a) Yards (b) Millimeter

(c) Grads (d) Microns

Q.10 The primary difference between the Model tab and the Layout tab is ____.

(a) The Model tab is used for drawing in 3D and a Layout is used for drawing in 2D

(b) The Model tab is where you create the drawing and a Layout tab represents the sheet that you will plot or print on

(c) The color of the background

(d) The Model tab displays the drawing you are copying from and the Layout tab is where you lay out the new drawing

Section – B

04X04 = 16 Marks

Q.11 Define Array with its short key and explain its types with neat sketch.

Q.12 Write two differences between Major & Divide in AutoCAD with short key.

Q.13 Explain any four differences between basic Hand drawing and AutoCAD drawing.

Q.14 What do you understand by DWG and DXF file format, write down any two differences between them.

Section – C

01X06 = 06 Marks

Q.15 Explain the followings tool and also mention their short key used in AutoCAD.

(a) Explode (b) Extend

(c) Ellipse (d) Polygon

(e) Stretch (f) Scale

Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in layout mode.

Q.17 Draw all required possible views and show details of a Box Cabinet with following aspects-

a) Length – 250
b) Depth – 250
c) Height – 250
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f) Back wall placement from back edge should be 12 mm

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i) Note:

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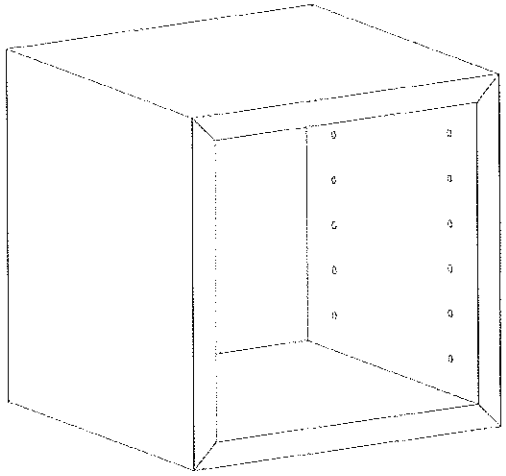

(For Your Reference)

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer Key

School of Woodworking Skills

Session: 2019-20 (Summer Semester)

B. Voc. Program, 3rd Semester,

End-Sem. Examination

Set-B

Course Code: GEN1305 **Time: 3 Hours**

Course Name: Elementary Drawing Skills **Max. Marks: 50**

Instruction:

1. Answer all question from section A, each question carries one mark.
2. Answer all question from section B, each question carries four marks.
3. Answer all question from section C, each question carries six marks.
4. Answer all question from section D, each question carries nine marks.

Section – A

0X01 = 10 Marks

Q.1 Which of the following scales is a reducing scale?

(a) 3:1 (b) 1:3

(c) 1:1 (d) None of the above (b)

Q.2 Which one of the followings term stands for UCS?

(a) User Coordinate State (b) Using Coordinates Screen

(c) User Coordinate System (d) User Coordinate Set (c)

Q.3 When the space is not interpreted as the enter key?

(a) When entering text

(b) When using the PEDIT command

(c) When selecting objects

(d) The space is always an alternative to the enter key (a)

Q.4 Copy command also creates Multiple copies of an object.

(a) True (b) False

(c) Both conditional (d) None of these (a)

Q.5 Which key is used to obtain properties palette in AutoCAD?

(a) Ctrl + 1 (b) Ctrl + 2

(c) Ctrl + 3 (d) Ctrl + 8 (a)

Q.6 To obtain parallel lines, concentric circles and parallel curves _____ is used.

(a) Copy (b) Fillet

(c) Offset (d) None of the Above (c)

Q.7 What are the Advantages of AutoCAD?

(a) Improve the quality of designs

(b) Increase the productivity of the designer

(c) Creates drawings with accuracy and quickly

(d) All of the above (d)

Q.8 Which of the following workspaces are available in AutoCAD?

(a) 3D basics (b) 3D modelling

(c) Drafting and Annotation (d) All of the above (d)

Q.9 Which is not a unit of length measurement_____?

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(c) Grads (d) Microns (c)

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(a) The Model tab is used for drawing in 3D and a Layout is used for drawing in 2D

(b) The Model tab is where you create the drawing and a Layout tab represents the sheet that you will plot or print on

(c) The color of the background

(d) The Model tab displays the drawing you are copying from and the Layout tab is where you lay out the new drawing (b)

Section – B

04X04 = 16 Marks

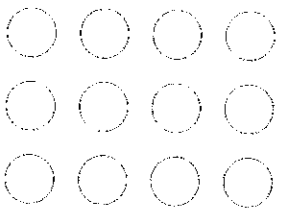
Q.11 Define Array with its short key and explain its types with neat sketch.

Ans. Array is the collection of similar object. Array creates copies of objects in a arranged pattern.

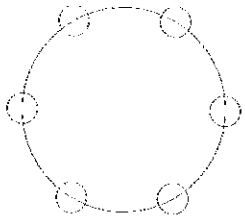
Short key - (AR + Enter)

Types of Array as follow-

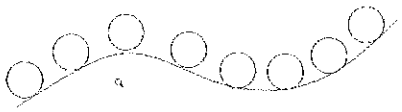
1. Rectangular Array – Evenly distributes object copies into any combination of rows, columns.
2. Polar Array – Evenly distributes object copies in a circular pattern around a center point.
3. Path Array - Evenly distributes object copies along a path



Rectangular Array



Polar Array



Path Array

Q.12 Write two differences between Major & Divide in AutoCAD with short key.

Ans.

S. No.	Major	Divide
1	Short Key – ME + Enter	Short Key – DIV + Enter

2	A line divided by no of segment	A line divided by length of segment
3	Length is automatic fixed according to segments	Length is define by user

Q.13 Explain any four differences between basic Hand drawing and AutoCAD drawing.

Ans.

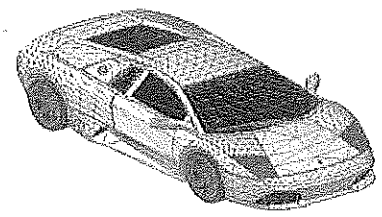
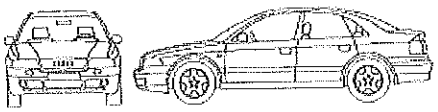
S. No.	Basic Hand Drawing	Auto Cad Drawing
1	It is truly made by hand on paper	We can draw in software computer
2	It has to be store manually cause of hard copy	It has to be store in computer memory
3	More time consuming to draw on paper	Less time consuming cause of electronic medium
4	All things have to draw, no any predefined library	We can access predefined library of AutoCAD

Q.14 What do you understand by DWG and DXF file format, write down any two differences between them.

Ans. These both are file extension of AutoCAD file.

DWG - It should be used if your drawing will only be accessed via AutoCAD.

DXF - It should be used if you're sharing drawings between different CAD or vector based programs.

S. No.	DWG File	DXF File
1.	The acronym DWG stands for Drawing.	The acronym DXF stands for Drawing Exchange Format.
2.	It is the native file format for AutoCAD for storing 2D and 3D design data.	DXF format became the standard for data exchange between CAD programs.
3.	DWG handles 3D geometry 	DXF stores 2D vector images 

Section – C

01X06 = 06 Marks

Q.15 Explain the followings tool and also mention their short key used in AutoCAD.

(a) Explode
(b) Extend
(c) Ellipse
(d) Polygon
(e) Stretch
(f) Scale

Ans.

(a) Explode - Explodes a compound object when you want to modify its component separately i.e. used for explode/brake a unit object to modify its component separately. This command can be used to explode objects like Polyline to simple lines, an array or a block to a simple geometry etc.

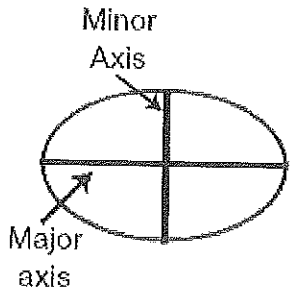
Short key - X + Enter

(b) Extend – Extend command allows to increase the length of an object within the limits of defined object. This can be used to extend a part of an object with respect to a boundary edge. Boundary edge can be any line, polyline, circle, arc, ellipse or any reference line.

Short key - EX + Enter

(c) Ellipse – Used to draw any oval shape by the parameter of major and minor axis. This shape formed when a cone is cut by an oblique plane which does not intersect the base.

Short key - EL + Enter



(d) Polygon – A polygon is bounded by close path with a finite sequence of straight line segments as chain. Used to draw any regular polygon (Closed chain of defined edges/sides) from 3 sides to 1024 sides.

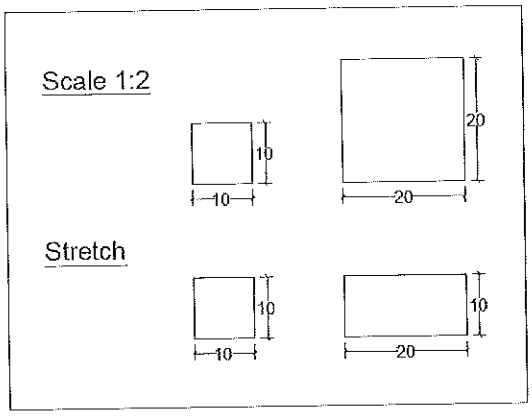
Short key - POL + Enter

(e) Stretch – Used to lengthen object, shorten them and to alter their shapes by a selection window. This moves only the vertices and endpoints that lie inside the crossing selection. Stretch does not modify 3D Solids.

Short key - S + Enter

(f) Scale – Used for either reducing or increasing the actual size of the selected object by a specified scale. A scale factor represents the ratio of two corresponding lengths in similar geometric shapes.

Short key - SC + Enter.



Section – D

02X09 = 18 Marks

Q.16 Draw the title block with all necessary details in layout mode.

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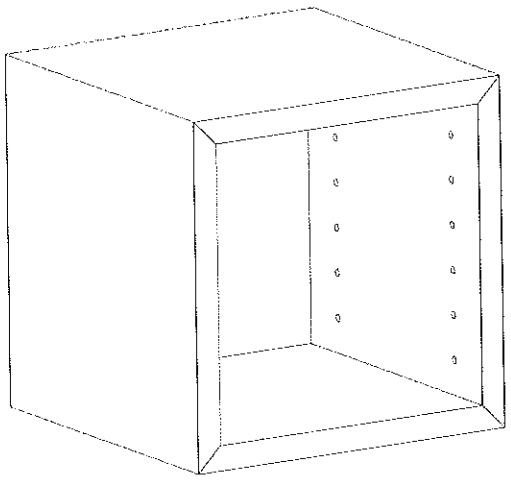


(For Your Reference)

Ans. Refer Attachment 1 & 2 For question 16 & 17.

Project Title:	XXXXXXXXXXXXX	Scale:	X:X (XX)	
Project no:	XXXXXXXXXXXXX		Drawn By:	Checked By:
Course Name:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Date	xx-xx-xxxx	xx-xx-xxxx
Course Code:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Name	XXXXXXX	XXXXXXX
Semester:	xxxxxxxxxxxxxxxxxxxxxxxxxx	Reg. No./ID	XXXXXXX	XXXXXXX

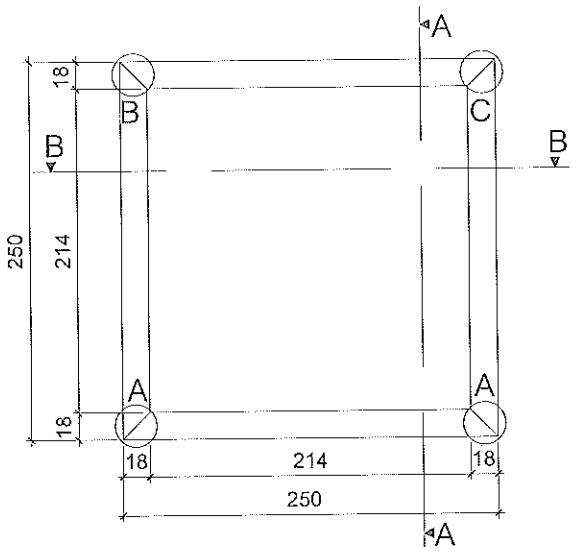
BHARTIYA SKILL DEVELOPMENT UNIVERSITY

BSDU

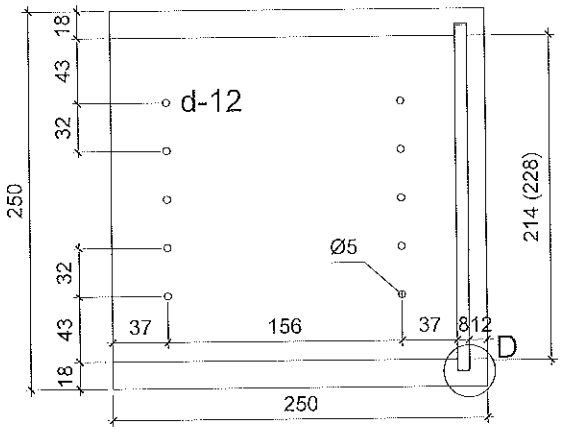
॥ कौशल प्रज्ञान सम्पद् ॥

Woodworking

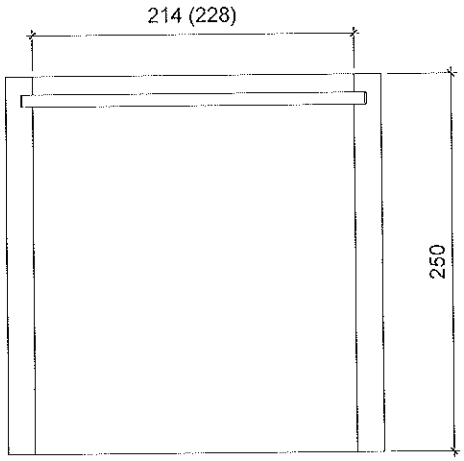
Front view



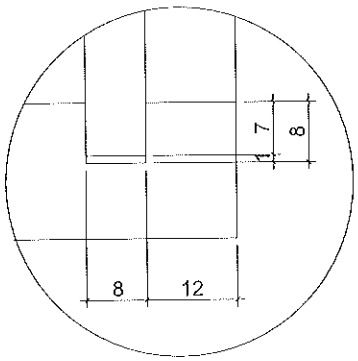
Section A-A



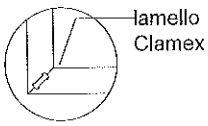
Section B-B



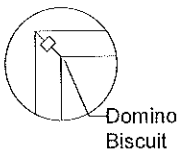
Detail D



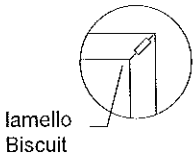
Detail A



Detail B



Detail C



Project Title:	Box Construction	Scale:	1:5 (A4)	
Project no:	Exam_End Sem_01.01		Drawn By:	Checked By:
Course Name:	Elementary Drawing Skills	Date	xx-xx-xxxx	xx-xx-xxxx
Course Code:	GEN1305	Name	XXXXXXX	XXXXXXX
Semester:	3rd Semester	Reg. No./ID	XXXXXXX	XXXXXXX

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Woodworking