SEE -Model Theory Question Paper - 1

CODE: 20PM01T

II Semester Diploma Examinations PROJECT MANAGEMENT SKILLS

Time: 3 Hours] [Max Marks: 100

Q No	Questions N Section -1			
	T			
1	Differentiate between Project and Operation.	5		
2	List the types of project and explain any one type of projects.	5		
3	List any five prerequisites for successful project implementation.			
4	Define Project team. List any 3 types of a project team.	5		
5	Explain Project Management Life cycle.	5		
6	Write any five functions of Project planning.	5		
7	Explain SMART tool in goals and objectives in Monitoring.			
8	What is Project Review? List its objectives.			
9	Discuss any 5 applications of IoT.	5		
	Section -2			
	a. Describe the need and functions of project consultants.	5		
10	b. Write any 5 differences between PERT and CPM	5		
	a. Write any 5 differences between 1 ER1 and G M a. Write a note on Project Execution Plan (PEP)? List its 4 Sub-plans	6		
11	b. Mention any 4 advantages of project dairy.	4		
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12	b. What do you mean by Work Breakdown structure? List any 2 advantages of WBS	3		
	a. Define Risk. Explain any 3 types of Risks.	7		
13	b. List any 3 roles of Project manager to minimize risk in the project	3		
14	a. A family trip was planned for 3 days with a budget of Rs. 20,000 / - However the actual expenditure was Rs 30,000/ State the possible reasons for increase in the cost of expenditure.	7		
	b. Write a short note on Time Overrun	3		
15	a. John is managing a project which is to be completed in 18 months. During the planning phase, he created a detailed project plan that included the schedule, budget, resource allocation, and quality management plan. John used Gantt charts to visualize the timeline and dependencies of various tasks. He also set up regular status meetings to track progress and make			

	Q3: What k	ey component	ıs meetings im	portant in pro d in John's de	oject timeline and ject management? tailed project plan?	
	a. Determine	the evnected t	ime for the foll	lowing activiti	es	<u>4</u> 7
	a. Determine	the expected t	inie for the fon	iowing activiti	_	,
	600			luration in days		
	Aci	ivity Optimi. 2 2	stic Most Likely 5	Pessimistic 8		
	i -	(FA)	10	16		
16	1 -	4 1	7.	13		
16	2 -	5 5 5	8	11		
	3 - 4 -	10.000 CO.	8	14 12		
	5 -	1000	7	10		
	b. Write the in					3
	Develop a netwo	rk diagram fo	or a project v	whose activit	ies and preceding	
a	ctivities with dur	ation are giver	n below			
		Activity	Predecessor	Duration (Days)		
		A	-	3		
		В	A	4		
17		С	A	2		10
		D	В	5		
		E	, C	1		
		F	С	2		
		G	D, E	4		
		Н	F, G	3		
	a. State any 5 purpose of project control			5		
18	b. Write any 5 functions of project auditor.			5		
	a. List any 5 the differences between Augmented Reality (AR) and Virtual				5	
19	Reality (VR) b. Write the applications of Cloud Technology in Project Management.					

SEE -Model Theory Question Paper - 1

CODE: 20PM01T

II Semester Diploma Examinations PROJECT MANAGEMENT SKILLS

Time: 3 Hours]

[Max Marks: 100

Note:

- i) Answer any SIX questions from Section 1. Each question caries 5 marks.
- ii) Answer any SEVEN full questions from Section- 2. Each question caries 10 marks.

1. Differentiate between Project and Operation.

Sl#	Project	Operation
1	Temporary	Repetitive
2	Unique	Continuous cycle
3	Create new product, service or process	Product, service or process already created and is in use
4	Performance, cost and time are uncertain	Performance, cost and time are known
5	Developing a new system	System already exists, maintaining and sustaining
6	Unexpected inputs and outputs	Expected inputs and outputs
7	More risk, usually done for the first time	Fewer risk as they are repeated many times
8	When objectives are achieved the project ends	Multiple objectives to be achieved again and again

(5 Marks)

2. List the types of project and explain any one type of projects.

(5 Marks)

Types of projects are:

- i. Normal project
- ii. Crash project
- iii. Disaster project

i. Normal project:

- These projects are completed in the give time.
- All the stages in this project are allowed to take their normal time as planned previously.
- Minimum capital is required. (Money or Fund)
- No sacrifice in quality.
- Ex: Construction of a house, construction of small bridge etc.

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Continued...

2. List the types of project and explain any one type of projects.

(5 Marks)

ii. Crash project:

- Requires additional cost to gain time.
- · Simultaneous work by sub-contracting.
- Minimum overlapping of phases (stages) is encouraged.
- · Ex: construction of building, construction of highways etc.

iii. Disaster project:

- These projects are undertaken due to unexpected natural calamities such as flood, earthquake etc.
- Anything can be needed to gain time.(huge or massive investments)
- Round the clock work is done.
- Ex: Repair of dam in case of damage due to natural calamities. Repair of bridges or roads in case of flood or any other disaster.

3. List any five prerequisites for successful project implementation.

(5 Marks)

- · Adequate formulation.
- Sound project organisation.
- Proper implementation planning.
- Advance action.
- Timely availability of funds.
- · Effective monitoring.
- · Judicious equipment tendering and procurement
- Better contract management

4. Define Project team. List any 3 types of a project team.

(5 Marks)

Project Team:

A project team is a group of individuals (team members or project staff)
who have specific roles in the project.

Project team can be classified as:

- Initial project team
- Designated project leader/manager
- Core project team or project steering committee
- Full project team
- Project advisors
- Project stakeholders
- Process facilitators.

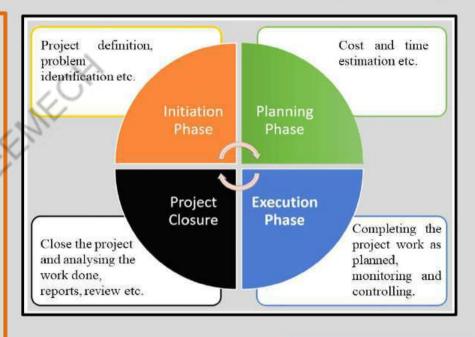
5. Explain Project Management Life cycle.

 Project Management life cycle are the phases or stages of a project from start to the end.

The four phases in project life cycle are:

- a) Initiation: Project definition and project problems are identified in this stage.
- b) Planning: Cost and time estimation etc.
- c) Execution: Completing the project work as planned.
- **d)** Closure or End: Close the project and analysing the work done, reports, review etc.

(5 Marks)



6. Write any five functions of Project planning.

(5 Marks)

Following are the functions of project planning:

- Finding goals & objectives.
- Breaking tasks into smaller parts and assigning them (Task management).
- Resource management.
- Time estimation.
- Identifying potential problems (Risk management).
- Setting quality standards (Quality planning).
- · Communication planning.
- Planning for anything that needs to be purchased or hired (Procurement planning).
- Making sure everything fits together well (Integration).
- Keeping records of everything (Documentation).

7. Explain SMART tool in goals and objectives in Monitoring.

(5 Marks)

- Goals defines what is excepted from a project.
- Objectives are the sub group of the goal.
- Goals and objectives should be "SMART".
 - Specific: should be clear and specific.
 - Measurable: Able to measure, by when it can be completed.
 - Achievable: Should be realistic with fixed time and resources.
 - Realistic: Goal should match objective.
 - *Time bound:* Must have fixed timeframe or time to complete.

8. What is Project Review? List its objectives.

(5 Marks)

Project Review:

 Project Review refers to the systematic evaluation of a project at various stages.

Objectives of Project Review:

- To examine whether the project is implemented as planned or not.
- To measure the impact of the project.
- To examine the project efficiency.
- To measure the quality of the project.
- To review the safety features followed during the project.
- To examine the methods, process, procedures followed during the project.
- To measure the outcome of the project.

9. Discuss any 5 applications of IoT.

(5 Marks)

Applications of IOT are as follows:

- Smart Power Grids with Energy management.
- Smart cities
- Smart Building : reducing Energy consumption.
- Smart homes: Smart light, home security systems, Smart Air conditioning systems, Smart Washing machine etc.
- Smart Agriculture: Weather monitoring, soil content monitoring etc.
- Smart Traffic control, Smart parking control, smart roadside assistance.
- Military applications for data collection of battle field.
- Voice assisted devices such as Alexa, Google etc.

10. a. Describe the need and functions of project consultants.

(5 Marks)

Need of Project consultant:

- Consultants provide guidance and direction to the project planning, completion and post project evaluation.
- They provide the advantage of expertise.
- They assist the Project manager or the project team to achieve cost control and time control.

Functions of project consultant:

- · Preparation of feasibility report.
- Preparation of Techno-economic report.
- Preparation of detailed project report.
- Detailed engineering drawing and consultancy services.
- Project monitoring and control.
- Supervision of erection and commissioning of report.
- Provide pre and post commissioning services.

Section -2

10. b. Write any 5 differences between PERT and CPM

(5 Marks)

Sl. No.	PERT	СРМ	
1.	Project Evaluation and Review Technique.	Critical Path Method.	
2.	Control of time.	Control time and cost.	
3.	Event-oriented.	Activity-oriented.	
4.	Probabilistic.	Deterministic.	
5.	Three time estimates (t _o , t _m & t _p).	One time estimate.	
6.	High precision time estimate.	Reasonable time estimate.	
7.	Non – repetitive activities	Repetitive activities	
8.	Circle for events & line connecting the circles represents an activity.	Circle for an activity and the line joining the circles represents an events.	
9.	Research & Development projects.	Construction projects.	
10.	Ex: Finding a new vaccine.	Ex: Construction of dams, bridges or roads.	

11. a. Write a note on Project Execution Plan (PEP)? List its 4 Sub-plans.

(6 Marks)

- □ Project Execution Plan (PEP) is a complete document that plans how a project will be executed, monitored and controlled to achieve its objectives.
- ☐ It serves as a roadmap for the project team.
- ☐ It provides clarity on processes, roles and responsibilities.
- ☐ The PEP is created during the planning phase and continuously updated throughout the project lifecycle.
- ☐ It serves as a key reference document for decision-making, communication, and coordination

The 4 sub-plans of PEP are as follows:

- Resource Management Plan
- Risk Management Plan
- · Quality Management Plan
- Communication Management Plan

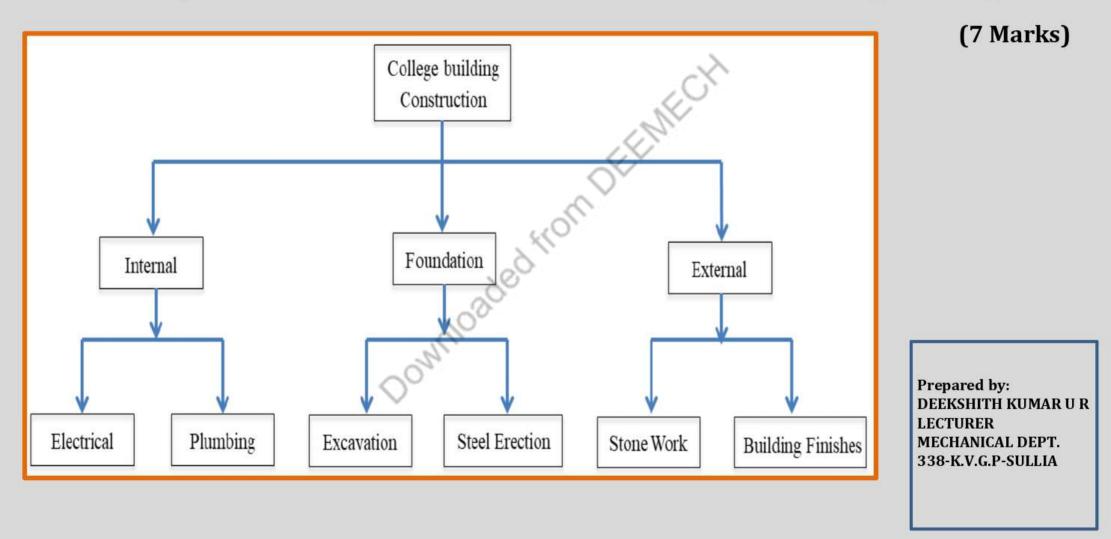
11. b. Mention any 4 advantages of project dairy.

The advantages of Project Dairy are as follows:

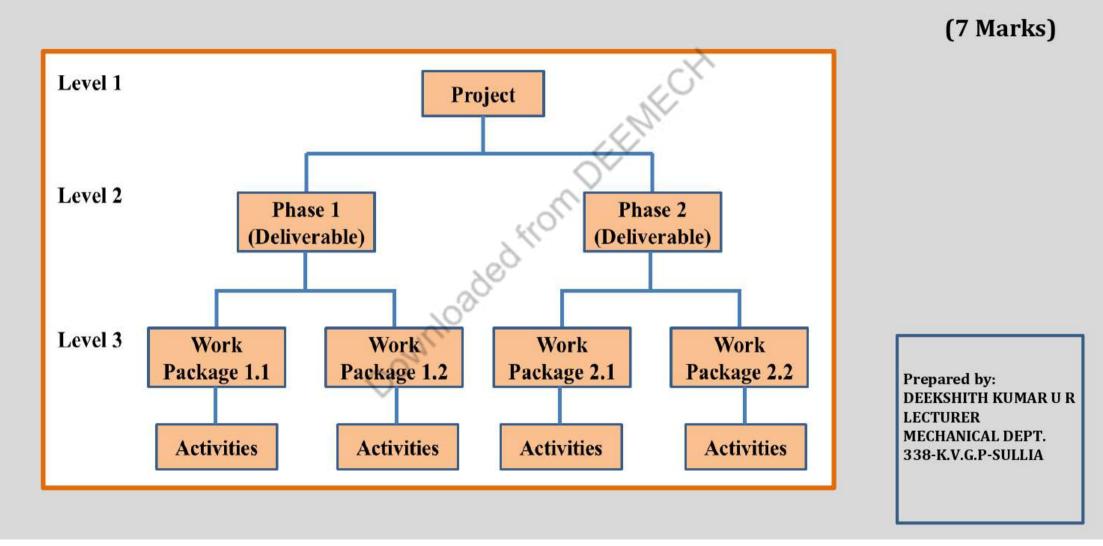
- It helps project manager to record all project activities.
- It helps the project team to track progress.
- It helps the project team to complete tasks before deadlines and improve accountability.
- It provides historical reference for the problem faced and helps in solving similar problems in the present.
- It will avoid misunderstanding and provides an effective communication.
- It will help in preparing follow-up for pending work and committed dates.
- Maintaining the diary helps us to get relief from the burden of carrying everything in our mind.
- It will also boost up our memory power thereby helps us to avoid the problems of unattended work due to lack of memory.

(4 Marks)

Section -2 12. a. Develop a Work breakdown structure for the construction of a college building



Section -2 12. a. Develop a Work breakdown structure for the construction of a college building



12. b. What do you mean by Work Breakdown structure? List any 2 advantages of WBS

Work Breakdown Structure (WBS):

- A work breakdown structure (WBS) is a project management tool that breaks down a project into smaller, more manageable tasks.
- It is a tree-like structure that shows the different components of a project and how they relate to each other.

Advantages of WBS:

- It helps to identify all the tasks that need to be completed.
- It helps to estimate the time, cost, and resources required to complete the project.
- It helps to identify potential risks and challenges.
- It helps to track progress and ensure that the project stays on track.
- It provides a common understanding of the project goals among project team.

(3 Marks)

13. a. Define Risk. Explain any 3 types of Risks.

(7 Marks)

Project Risk:

 Risk is defined as the possibility of an outcome being different from the expected outcome.

Types of risks:

- Technical Risks
- Social Risks
- Economic Risks
- Political Risks
- Production Risks
- Marketing Risks
- Financial Risks
- Human Risks

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Continued...

13. a. Define Risk. Explain any 3 types of Risks.

- Technical Risks: Risk due to changes in technology or change in technical specification (new technology).
- Social Risks: Shortage of necessary natural resources, labour tensions and social movements against the project are some social risks.
- Economic Risks: Economic risks refer to an increase in the rate of inflation, changes in the economic policies of governments.
- Political Risks: Nationalisation or privatisation of a particular industry, political instability, and trade restriction are some examples of political risks.

(7 Marks)

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Continued...

13. a. Define Risk. Explain any 3 types of Risks.

- Production Risks: Production risks refer to the shortage of required raw materials, sudden breakdown of key machinery and huge installation and maintenance costs.
- Marketing Risks: Marketing risks refer to fail of project due to change in market demand also difficulties in distribution.
- *Financial Risks:* Financial risks refer to bad debts (loan), change in the interest rate, wrong choice of investments and mistakes in the accounting.
- Human Risks: Human risks refer to the sudden demise (death) of key employee, limited availability of skilled employees, inter-group politics, etc.

(7 Marks)

13. b. List any 3 roles of Project manager to minimize risk in the project

(3 Marks)

Project manager plays an important role in minimising project risk.

- He must maintain a project dairy to record project activities and progress.
- He must be able to identify the problems.
- He must be able to maintain a proper balance between time and money.
- He must take strong decisions.
- He must reduce the wastage of resources (time, money, men, materials, machine etc.)
- He must be flexible to any situation.
- He must properly communicate the project progress to all team members.

14. a. A family trip was planned for 3 days with a budget of Rs. 20,000 / - However the actual expenditure was Rs 30,000/-. State the possible reasons for increase in the cost of expenditure.

(7 Marks)

The possible reasons in the cost of expenditure:

- Poor trip planning
- Unplanned shopping
- Increased food expenses
- Wrong transport selection
- Emergency expenses or medical expenses
- High Toll charges
- Vehicle breakdown or repair cost
- Unexpected weather conditions leading to additional costs

14. b. Write a short note on Time Overrun

(3 Marks)

Time overrun:

- If the project is not completed within the given time, then the condition is called time overrun.
- This may be the result of poor planning and poor time management.
- Time overrun leads to many losses.
- Proper planning, controlling and monitoring with review system can always avoid time overrun.

The possible reasons for the given project time overruns:

- Poor planning.
- Poor administration.
- Political interference.
- A change in the scope of the project.
- Poor time management.
- Delays.

15. a. John is managing a project which is to be completed in 18 months. During the planning phase, he created a detailed project plan that included the schedule, budget, resource allocation, and quality management plan. John used Gantt charts to visualize the timeline and dependencies of various tasks. He also set up regular status meetings to track progress and make adjustments as needed.

(6 Marks)

Answer the following Questions:

Q1: What tools did John use to visualize the project timeline and dependencies?

Q2: Why are regular status meetings important in project management?

Q3: What key components were included in John's detailed project plan?

Q1: What tools did John use to visualize the project timeline and dependencies?

Answer: Gantt chart

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Continued...

15. a. John is managing a project which is to be completed in 18 months. During the planning phase, he created a detailed project plan that included the schedule, budget, resource allocation, and quality management plan. John used Gantt charts to visualize the timeline and dependencies of various tasks. He also set up regular status meetings to track progress and make adjustments as needed.

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Q2: Why are regular status meetings important in project management?

Q3: What key components were included in John's detailed project plan?

Q2: Why are regular status meetings important in project management?

Answer: To track progress, to avoid mistakes and issues and to make necessary adjustment

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Continued...

15. a. John is managing a project which is to be completed in 18 months. During the planning phase, he created a detailed project plan that included the schedule, budget, resource allocation, and quality management plan. John used Gantt charts to visualize the timeline and dependencies of various tasks. He also set up regular status meetings to track progress and make adjustments as needed.

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Q2: Why are regular status meetings important in project management?

Q3: What key components were included in John's detailed project plan?

Q3: What key components were included in John's detailed project plan?

Answer: schedule, budget, resource allocation, and quality management plan.

15. b. List any four Tools used in Project Planning.

(6 Marks)

Following tools are available in project planning:

- Gantt Chart
- Bar Chart
- Flow Chart
- WBS (Work Breakdown Structure)
- CPM (Critical Path Methods) Network Diagrams
- PERT (Project Evaluation & Review technique) Network Diagrams
- Time Estimates
- SWOT Analysis
- Mind Mapping

Section -2

16. a. Determine the expected time for the following activities

(7 Marks)

	Estimated duration in days			
Activity	Optimistic	Most Likely	Pessimistic	
1 - 2	2	5 0	8	
1 - 3	4	10	16	
1 - 4	1	7.00	13	
2 - 5	5	8	11	
3 - 5	2	8 %	14	
4 - 6	6	000 9	12	
5 - 6	4	N 7	10	

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Continued...

Section -2

16. a. Determine the expected time for the following activities

Activity	Estim	Expected time		
receivity	Optimistic (to)	Most Likely (tm)	Pessimistic (tp)	$\mathbf{t_e} = \frac{tp + 4tm + to}{6}$
1-2	2	5	8	5
1-3	4	10	16	10
1-4	1	7 dec	13	7
2-5	5	8100	11	8
3-5	2	00,8	14	8
4-6	6	9	12	9
5-6	4	7	10	7

(7 Marks)

16. b. Write the importance of Project Evaluation.

(3 Marks)

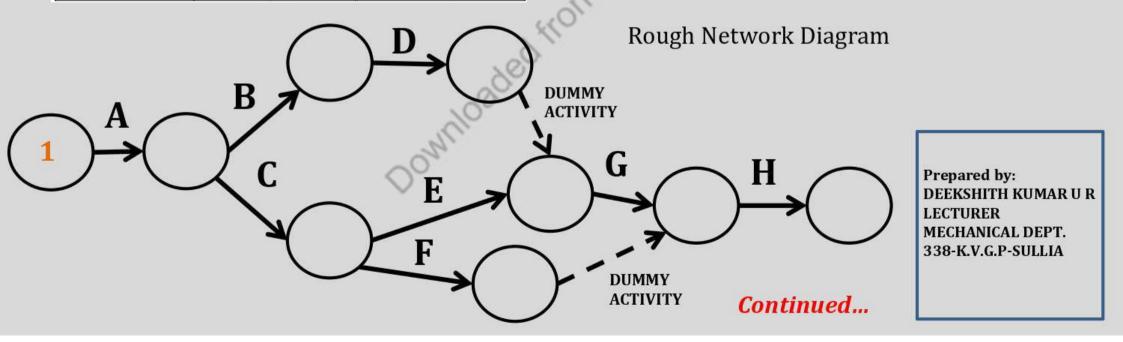
Following are the importance of Project Evaluation:

- Better Project management.
- Improves team performance.
- Better Project Planning.
- Track progress.
- Helps in decision making.
- Maintains quality and standards.
- Finds strengths and weaknesses.
- · Helps in using resources carefully.
- Promotes improvement.

17. Develop a network diagram for a project whose activities and preceding activities with duration are given below.

(10 Marks)

Activity	Predecessor	Duration(days)
A		3
В	A	4
C	A	2
D	В	5
Е	C	1
F	C	2
G	D, E	4
H	F, G	3



Section -2

17. Develop a network diagram for a project whose activities and preceding activities with duration are given below.

(10 Marks)

		•	
Activity	Predecessor	Duration(days)	
A	<u>=</u>)(3	
В	A	4	D Rough Network Diagram
C	A	2	() D
D	В	5	DUMMY ACTIVITY
E	C	1	ACTIVITY
F	C	2	$\begin{pmatrix} 1 \end{pmatrix} \rightarrow \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \begin{pmatrix} 1 \end{pmatrix} \end{pmatrix} \end{pmatrix} \end{pmatrix}$
G	D, E	4	$C \qquad E \qquad G \qquad H \qquad C$
Н	F, G	3	
~ A ~	$\sim B$	Door	
$1) \rightarrow (2)$	2 4 C 2	E	Prepared by: DEEKSHITH KUMAR U R LECTURER MECHANICAL DEPT.
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18. a. State any 5 purpose of project control

(5 Marks)

Purposes of project control are as follows:

- To control the project cost.
- To control project time
- To control the project activities.
- · To control the delays in project activities.
- To control the project team.
- To control project process through monitoring.
- To motivate project team through performance evaluation.
- To achieve the project goals effectively and efficiently.

18. b. Write any 5 functions of project auditor.

Functions of Project auditor:

- Checks project plans.
- · Looks for risks.
- Checks budgets and finances.
- Review resource usage.
- Track project progress.
- Ensures rules are followed.
- Review quality of work.
- Find issues and suggests solution.
- · Writes audit reports.
- Ensures policies are followed.

(5 Marks)

Section -2

19. a. List any 5 the differences between Augmented Reality (AR) and Virtual Reality (VR)

(5 Marks)

Augmented Reality (AR)	Virtual Reality (VR)
A digital layer is superimposed on the real physical world.	Computer technology to create a simulated virtual world.
Mix Of real world and virtual world.	Creates entire virtual world.
User can clearly differentiate between real world and virtual world.	For user it's hard to differentiate what is real and what is virtual.
User is not cut off from the real world.	User is completely immersed in artificial world, cut off from the real world.
Only requires devises such as smart phone, tablet, laptops, smart lenses etc.	VR requires head mounted devises (HMD) or additional equipment's.

19. b. Write the applications of Cloud Technology in Project Management.

(5 Marks)

Applications of Cloud Technology in Project management are as follows:

- Teams can work together in real time.
- Stores all project files in one place.
- · Keeps data safe and secure.
- Helps assign and track tasks.
- Access project data from anywhere.
- · Adjust resources as needed.
- Saves money on hardware and software.
- Improves communication with tools like chats and video calls.
- Automates repetitive tasks.
- Track progress and createsreports easily.