1 What are the triple triple constraints?

scope、cost、time.

2 What are the 49 Project Management Processes? Using a table.

| KA/PG	Initiating	Planning	Executing	Monitoring & Controlling	Closing
Integration	Develop Project Charter	Develop Project Mgmt Plan	• Direct and Manage Project Work • Manage Project Knowledge	• Monitor and Control Project Work • Perform Integrated Change Control	Close Project or Phase
Scope		• Plan Scope Management • Collect Requirements • Define Scope • Create WBS		• Validate Scope • Control Scope	
Schedule		• Plan Schedule Mgmt • Define Activities • Sequence Activities • Estimate Activity Durations • Develop Schedule		Control Schedule	
Cost		• Plan Cost Mgmt • Estimate Costs • Determine Budget		Control Costs	
Quality		Plan Quality Mgmt	Manage Quality	Control Quality	
Resource		• Plan Resource Mgmt • Estimate Activity Resources	• Acquire Resources • Develop Team • Manage Team	Control Resources	
Communications		Plan Communications Mgmt	Manage Communications	Monitor Communications	
Risk		• Plan Risk Mgmt • Identify Risks • Perform Qualitative Risk Analysis • Perform Quantitative Risk Analysis • Plan Risk Responses	Implement Risk Responses	Monitor Risks	
Procurement		Plan Procurement Mgmt	Conduct Procurements	Control Procurements	
Stakeholder	Identify Stakeholders	Plan Stakeholder Engagement	Manage Stakeholder Engagement	Monitor Stakeholder Engagement	

3 What are 8 project management techniques

- Work breakdown structure (WBS)
- Critical Path Method (CPM)
- Scrum.
- SAFe.
- Kanban.
- Gantt Chart.
- PERT.
- Waterfall.

4 difference between scrum and waterfall (at least 5 difference)

Scrum	Waterfull
Scrum can have multiple releases	Waterfull has only one release
Scrum keeps cutomers informed about every step during project development	Waterfull only contacts cutomers at the delivery date
Scrum welcomes changes of requirements at early and late stages of the project	Waterfull welcomes changes only at requirement phase and making changes are not allowed at late stages
Scrum divides work into sprints and then assign work within team members	Water divides work into stages(phases) and process continues one after another
Scrum works well for difficult and complex projects, in which requirements are not entirely clear before development	Waterfull model works well with smaller projects, in which requirements are clear before development
Scrum development saves time and money by reviewing regular sprints in the development process	Waterfull model may take extra time as reviewing is done at the result only

5   difference project phase and 5 project management process groups.

Processes are performed within Phases; and Phases are performed within the Lifecycle
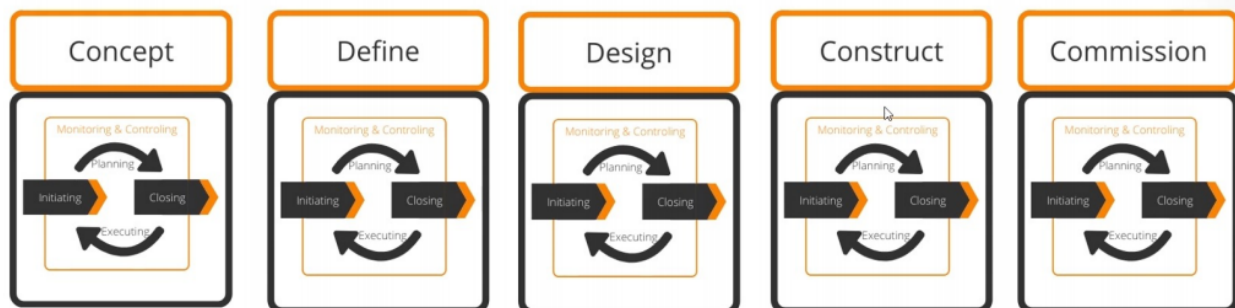
6   Critical path methods, forward and backward pass, find critical path and slack or float of the activity, and find project duration

A small project has 8 activities and time in days for each activity is given below:
   a. Draw the network diagram.
   b. Compute Early Start, Late Start times.
   c. Calculate float for each activity.
   d. Determine critical activities and critical path.
   e. Find the project duration

Activity	Time in Days	Immediate Predecessor
A	6	-
B	4	-
C	3	A
D	4	B
E	3	B
F	10	-
G	3	E, F
H	2	C, D

critical path: F-G
project duration = 13days
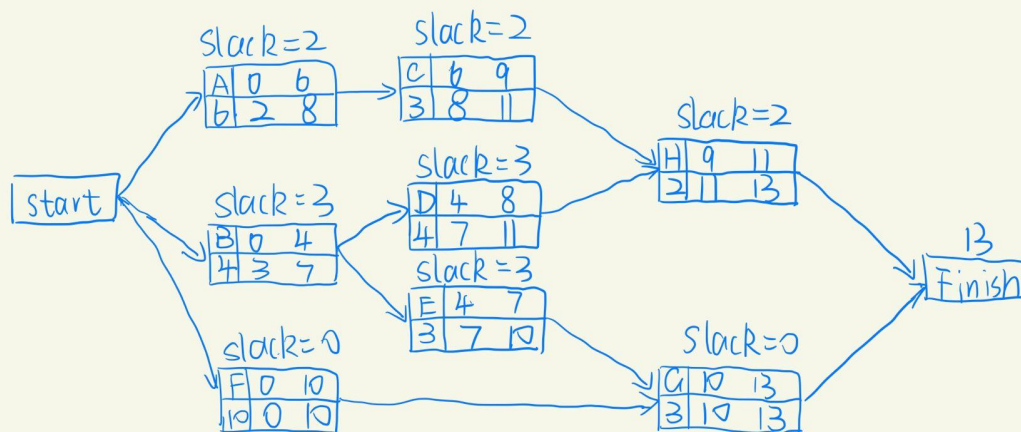
7 List and describe each of the 10 project management knowledge areas.

1. **Integrated management:** its function is like the thread in the necklace;

2. **Scope management:** do and only do what should be done;

3. **Time management:** let everything proceed according to the established schedule;

4. **Cost management:** calculate and spend money properly;

5. **Quality management:** the purpose is to meet the demand;

6. **Human resource management:** let team members work with you efficiently;

7. **Communication management:** let the right person convey the right information to the right person at the right time and in the right way;

8. **Risk management:** "look for trouble without trouble", so as to make the project "risk-free";

9. **Procurement management:** be Party A;

10. **Stakeholder management:** keep good relationship with project stakeholders and make them satisfied.

8　What are the phases in a traditional project life cycle

initiating, planning, executing, and closing.

9　What are the 4 scrum ceremonies

Sprint Planning; Daily Scrum; Sprint Review; Sprint Retrospective

10　What is performance reporting? What are some methods used for performance reporting?

Performance reporting keeps stakeholders informed about how resources are being used

to achieve project objectives

- Progress reports describe what the project team has accomplished during a certain period of time

- Status reports describe where the project stands at a specific point in time

- Forecasts predict future project status and progress based on past information and trends

11　What are the 12 principles behind the Agile Manifesto?

1. **Satisfy the customer** through early and continuous delivery of valuable software.

2. **Welcome changing requirements**, even late in development.

3. **Deliver** working software **frequently**

4. Business people and developers must **work together**

5. Build projects around motivated individuals. Give them the environment and support they need, and **trust** them.

6. The most efficient and effective method of conveying information is **face-to-face conversation.**

7. **Working software** is the primary measure of progress.

8. The sponsors, developers, and users should be able to **maintain a constant pace**indefinitely.

9. Continuous attention to technical **excellence** and good design .

10. **Simplicity**–the art of maximizing the amount of work not done–is essential.

11. The best architectures, requirements, and designs emerge from **self-organizing teams**.

12. The team reflects on how to **become more effective** and adjusts its behavior accordingly.

12 What are the 5 stages of the Tuckman model

Forming, Storming, Norming, Performing, Adjurning or mourning

13. What are the associated activities and deliverables along Project Process Groups?

Important

PROJECT PROCESS GROUPS and ASSOCIATED ACTIVITIES & DELIVERABLES				
INITIATING	**PLANNING**	**EXECUTING**	**MONITORING/ CONTROLING**	**CLOSING**
ACTIVITIES	**ACTIVITIES**	**ACTIVITIES**	**ACTIVITIES**	**ACTIVITIES**
Gather high-level information and requirements about project.	Build WBS Create project schedule Identify purchases Get quotes Define scope Identify risks Determine communications	Hold Kickoff Meeting Resources execute plan PM manage team / project Make purchases Ensure scope is adhered to Communicate Deliver product	Status meetings / reporting Change control activities	Transition to support Store documents Collect final invoices Finalize budgeted & actual costs Conduct Lessons Learned Write closeout report
DELIVERABLES	**DELIVERABLES**	**DELIVERABLES**	**DELIVERABLES**	**DELIVERABLES**
• Project Charter	• WBS • Project Schedule • Budget • Scope Document • Risk Plan • Communication Plan	• Work to be completed • Product and documents • Product / service	• Status Reports, metrics, information • Change Control documents	• Closeout Reports • Final budget • Support documents

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