**ISQS 5350 Project Management**

**Homework 3 Summer II 2020**

Name\_\_Jonathan De Los Santos\_\_\_\_\_\_

There are 33 highly focused questions, each worth three points. You get one point for putting your name on the deliverable Homework 3 document!

Homework 3 has been streamlined to improve its role as preparation for Exam 3. **Please be concise.** Your are not asked to perform detailed analyses, so lengthy discussion is not expected. Bullet points are encourage; no credit will be lost for not using complete sentences.

Some questions have multiple parts; be sure to **answer all parts**.

To prepare yourHomework 3 file, insert **your name** above, and insert **your answers** in bold after each question, without deleting the question. Also, please add your name to the file name before submitting: ISQS 5350 Unit 3 Homeowork - **YOUR NAME HERE**.doc

1. What is the definition of scope?

* **The work involved in creating the products of a project**
* **The processes used to create those products**

2. What is scope validation?

* **Formal acceptance of the project deliverables**
* **Achieved by relevant customer or stakeholder sign-off**

3. What is scope creep?

* **The tendency for the project scope to grow**

4. Why does scope creep happen?

* **Changes to project scope are not controlled**
* **The original scope was defined poorly or too broadly**

5. Why is scope creep often harmful to project success?

* **It can prevent the completion of the actual project goals or progressing the overall business strategy**

6. What are requirements and what is their relationship to scope?

* **Requirements are defined by PMBOK as a “condition or capability that is necessary to be present in a product, service, or result to satisfy a business need”**
* **The requirements should define the deliverables of a project**
* **The delivery of those deliverables and the processes used to create them is the scope**

7. How are requirements gathered? What can be done to improve user input?

* **Requirements are gathered through some form of communication with the stakeholders**
* **This can be interviews, focus groups, questionnaires, observations, etc.**
* **User input can be improved by**
* **Improving how projects are selected**
* **Having users with the project team**
* **Holding regular meeting with defined agendas**
* **Make regular deliveries**
* **Don’t overpromise on deliveries or schedules**
* **Have users in the same location with developers**

8. What is requirements traceability?

* **Documenting all requirements, their attributes, and their status to ensure requirement completion**

9. What is a deliverable, and what is its relationship to scope and requirements?

* **The deliverable is the actual product expected from a project**
* **Could be hardware, software, documents, or any other output**
* **The requirements specify either what the deliverables are or how they should be constructed**
* **The scope is concerned with how those deliverables are created**

10. How is project scope management different between an agile versus predictive approach?

* **In predictive approaches, the slower schedule may increase both the cost and scope**
* **Scope management in agile can avoid scope creep by delivering often and being redefined or adjusted between iterations**

11. What is a work breakdown structure (WBS)?

* **A deliverable-oriented grouping of the work involved in a project that defined the total scope**

12. What are top-down and bottom-up approaches to creating a WBS?

* **Top-Down**
* **Starts with the largest items of the project and breaks them down**
* **Bottom-up**
* **Starts with specific tasks**

13. What is the difference between activity and work package in a work breakdown structure?

* **Work packages are tasks at the lowest level of the WBS**
* **Activities are the actions that need to be taken to complete work packages**

14. What is the relationship between work breakdown structure and project schedule?

* **Estimating the duration of activities in the WBS allows the creation of a project schedule for when items are expected to be completed**

15. What is a Gantt chart?

* **Gantt charts display schedule information by listing project activities along with their respective start and finish dates along a horizontal calendar**

16. What are the benefits of a Gantt chart?

* **They provide a standard format for displaying planned and actual project schedule information**

17. What are the different kinds of dependencies in project scheduling?

* **Mandatory dependencies are an integral part of the type of work being performed, also called “hard logic”**
* **Discretionary dependencies are chosen by the team and ideally follows good practices, sometimes called “soft logic”**
* **External dependencies involve interacts with non-project activities, these are external to the team and may affect the time and scope**

18. What is a milestone, and what is its relationship to an activity and a phase gate?

* **Milestones are significant events in a project that normally has no duration**
* **Serves as a marker for the completion of (usually) several necessary activities**
* **Milestones are useful for identifying where phase gates should occur so activities can be reviewed in the context of the entire project**

19. What are the recommended criteria for defining milestones?

* **Milestones should be specific, measurable, assignable, realistic, and time-bound**

20. What is the critical path and why is it valuable to identify it?

* **The critical path is the longest “path” of items that must be completed**
* **This is important as it determines the shortest project duration**

21. How can the critical path be identified?

* **The critical path can be calculated by finding the path whose activities add up to the longest duration**
* **This is more easily accomplished with a network diagram that shows the durations and dependencies**

22. What is schedule crashing?

* **Schedule crashing is shortening the amount of time to project completion by increasing costs, typically by adding personnel**

23. Why is schedule crashing done?

* **Schedule crashing is done to reduce the completion time of the project**
* **It is especially useful if a small amount of resources could dramatically decrease durations along the critical path**

24. What is a disadvantage of crashing?

* **The primary disadvantage is added cost**

25. How is project schedule management different between an agile versus predictive approach?

* **Predictive schedule management is**
* **Decomposed into specific, usually rigid activities**
* **Requirements and therefore scheduling is more fixed**
* **Primarily estimated by duration**
* **The project drives the time box**
* **Agile schedule management**
* **Projects are decomposed from Epics to stories, then tasks**
* **Requirements are flexible**
* **Size is estimated by story points which is used to determine a velocity for long term planning**
* **Sprints are time-boxed and projects are trimmed to fit to that iteration**

26. What are the different types of cost estimates?

* **Rough order of magnitude (ROM) provides a rough estimate of what a project will cost**
* **Budgetary estimates allocate money into an organization’s budget**
* **Definitive estimates provide accurate estimates of project costs**

27. What are the different types of budget reserves?

* **Contingency reserves are for known factors of indeterminate**
* **Management reserves are for unknown factors of indeterminate amounts**

28. What are parametric models?

* **Parametric models use the characteristics in a project as parameters in a mathematical model to estimate project costs**

29. What are tangible and intangible costs?

* **Tangible costs can be measured in dollars**
* **Intangible costs are difficult to measure, like personal time, goodwill, prestige, productivity, etc.**

30. What are direct and indirect costs?

* **Direct costs can be directly tied to creating the deliverables of a project**
* **Indirect costs are not directly tied to the project particularly, but are involved in generally performing work for the project like the building infrastructure, electricity, etc.**

31. What is sunk cost?

* **Any money that has been spent in the past**
* **Can create a trap of continuing a project because so much money has been spent already**

32. What is Earned Value Management?

* **This is a project performance measurement method that uses scope, time, and cost data**
* **Allows you to measure your performance on scope, time, and cost against a baseline**

33. How does uncertainty about scope, schedule, and cost influence the choice between a predictive versus agile approach?

* **Agile approaches, unlike predictive processes, do not require specific calculations of scope, schedule and cost**
* **Instead, costs and schedules are calculated by the amounts of sprints or iterations they will take**
* **Scope is determined to fit the sprint/iteration**
* **Projects with high levels of certainty will likely benefit from predictive approaches, whereas projects with more uncertain variables would likely do better with an agile approach**