**Module-2**

Question 1.

Answer 1. a). Effort and elapsed time are distinct but closely related in a workplace. They are important estimation for the stakeholders to know how a specific project will advance and to assess each employee’s contribution to the project. The effort is related to the number of hours required for an activity. For example, let's consider an example of a gardener. So every day he will work for 8 hours every day excluding the weekends. So by the end of the week, he does about 40 hours of work which excluding the breaks and lunchtime. If he works 40 hours only then he will be paid by his employer. On the other side elapsed time of a project is related to the total time between the designation and achievement of a project. It also includes the weekends, breaks, public holidays etc. So since effort is about the cumulative hours put in, it is referred by the number of hours whereas the elapsed time includes the breaks and weekends for completion of a project and so it's unit is days. So if the gardener can complete his job in an elapsed time of 10 days given he makes an effort of 8 hours per day. If he is making less effort than needed than the elapsed time will rise and vice-versa. So we can say they are inversely equivalent to each other. But if he makes more efforts on some days then he can also keep the elapsed time like working overtime without getting paid for it.

b). It is true that in no scenario there can be 100% availability by the staff. That can be due to several factors including professional and personal. The most prominent reasons are:

1. Low morale -> As there can be certain staff members who feel underappreciated for their efforts as compared to the others. In the long term, it can be exhausting and stressful for a person.
2. Anxiety -> As per the survey of 2018 there are at least 2 million people who suffer anxiety at the workplace. This not only affects their performance but they also lose interest in their job's. Which prompt them to take leaves more frequently.
3. Childcare -> Staff members can be forced to take a day off from work or work an inadequate number of hours because of children at home.
4. Partial Shifts -> Some members can be coming late, leaving late and taking longer breaks than given which is a pattern of absenteeism.
5. Health Problems → Mental and physical wellness is essential to ensure productivity and excellent performance of a person. So in case of illness, a person needs or told by his doctor to take leave from work which can lead to his/her absence.

There are various ways these circumstances can be overcome such as:

1. Low Morale → The managers of each team need to keep track of the effort and work done by each team members. They need to be recognised equally for it. Appreciation can be from bonuses, gratitude from the management for work and proposing inventive ways.
2. Anxiety →  At the workplace it is very common but overcoming it is not hard either. Management should fully support such members and also implement certain ways to overcome it. It can be by lowering workload, extensions etc for a certain time. Also, the company should hire a psychologist to help such members inside the work environment.
3. Partial Shifts → Offices should provide flexible work hours which allows those who arrive late for a rational reason. Also, actions should be taken against those without a reason or who repeats it. So that everyone else also not starts doing the same.
4. Childcare → Members should be allowed to take half-day leave in case of child distress. They should be allowed to work from home to do overtime on the weekend.
5. Health Problem → In case a member is involved in an accident and got injured because of it. He/she should be allowed to take leaves and work from home if possible. He/she can do overtime after they have recovered to make up for the lost time.

Question 2.

Answer 2. The factor’s that can affect human evaluation are:

* Lack of leadership → As we know that leadership is a fundamental factor in every project’s achievement. A leader is the one who leads the team with spirit and aid innovation. But if a person doesn’t have leadership qualities that he will attempt to do everything on his own, without considering his team’s view in mind. He can make unreasonable decisions to prove his supremacy over others. In that scenario, he might overlook useful and profitable guidance from his team. In such scenarios, there is a high probability of committing blunders because of a one-sided viewpoint.
* Unforeseen Circumstances → In a project, a team can come across unexpected circumstances like weather, budget, operation failure, a shift in technology etc. Such conditions can be random and beyond one’s control leading to setbacks in a project.
* Pressure from stakeholders → Stakeholders is crucial in project success. As they can be the client, managers, executives etc who are directly or indirectly benefited from the project’s success. As an example, a project manager asks for more resources like funds or time from the company in case of unforeseen circumstances like change in technology, delay in certain step etc. But the executive who is more concerned about profit rather than the project can deny the request. In that, scenario important factor’s cannot be properly calculated leading to an error in the future which can negatively impact a project.
* Inadequate support from staff → A project report is created at the beginning of a project with considerable research about the team members, resources present, the time required etc. So if after starting a project a staff member start taking sick leaves from work or he left the company etc. In that scenario to keep up with the deadlines, the other members will have to work at 200% efficiency which can be good in short-term. But in the long term, they can lose their drive and moral will go down, leading to further delay in a project. Such cases can lead to an increase in resources being used and further delay in a project.
* Insufficient research → Project research is done before the report is created so a lot of research is done regarding the budget, resources required for its completion. But if certain errors or factors are not taken into consideration it can lead to an increase in delays and resources utilisation.

It can solve in various ways:

* Facilitating Team Decision → Managers need to take staff into consideration with certain factor like abilities, preferences etc. Such things can lead to getting a wider view of the steps required as with it
* Resolving Inter-personal Conflict → Conflict among is really common which can lead them to make wrong decisions. But if conflicts are resolved than members will value each other’s view and look at things with a different perspective which makes more considerable estimations.
* Managing difficult people → As people who are difficult to manage will try to make their way out of things even when wrong. Such people’s estimation can trust cause their view is based on their own interest, not the project’s.
* Strengthen Team Accountability → Team members need to be made responsible for their part cause than the estimation can be met by them and others.
* Communication → If there is decent communication among teams who are involved in a project, the estimation can be improved. So if a manager is clear about the possible obstacles and resources needed to develop a project then estimates like completion time can be set more appropriately.

Question 3.

Answer 3. The three factors that can enhance the quality of estimation are:

* Building Up Metrics -->It includes getting a concept from other projects which had a similar approach. So if someone is working on a project they should look at the experience of other people who have handled comparable. So if assume A want to develop database software then they should look at B who has done it before. As they can see where B had face problem, which parts B faced a setback, reserves they had to use, the achievement time they had etc. With B example they can avoid many abrupt circumstances and be better equipped.
* Getting More Than One View that takes more than one person view so that we can explore more opportunities → If a project manager single-handedly decides the plan of action than there is always a probability that he/she can miss out some things or make estimation error. On the other hand, if more he/she takes decision based on people like staff, manager, team leaders to get a proof-read his job. Then the estimation can be more reliable and efficient.
* Estimating Risk and Analysis take the failure at any point in record → With evaluation comes the possibility of error at a certain phase of a life cycle. If that is taken into consideration, they can align the errors based on their priority. Also, take into account the time they will need to fix or overcome it.
* Reducing Dependencies → In project delays within a life-cycle phase can lead to delays within project completion. For instance, it is common to see testing after a design so while the design team is completing the testing needs to wait. So the delay in design can cause a delay in testing. So reducing dependencies can lead to better estimation.
* Break Down → It can be challenging to foretell the completion time of the whole project. But it is simpler to predict the time only for the interface design. So by breaking down of the project in smaller parts provides better assumptions for the estimation. So negligible risks of delay and better cost-benefit analysis.
* Best Estimation → In a project a lot of estimations can be made. But which is the best or most accurate? It is common to get certain estimation like earliest likely, almost certain or almost certain. So choosing one of the three deadlines can be difficult but at the same time, more options with their own benefits are provided.
* Learn Team Capability → Some members can be over-confident about their capabilities so they might choose the earliest date without consideration. Also, the project manager might overestimate his team skills such that if an error comes it will be resolved within time. But that is not the case in certain situations so delays are caused there.

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Question 4.

Answer 4. Project dependency refers to an entity or an object whose state is reliant on another entity of the project. Like a baker whose job is to produce a cake and do the icing. So unless he is able to make a cake he cannot move to the icing portion. So cake's icing becomes dependent on baking. So a certain delay can create a delay in another state as well.

To manage them there are several tools that a project manager can use to examine them:

* Work Breakdown Structure → This involves breaking down of the project into smaller tasks and make estimation about each task like cost analysis, percentage of work etc.
* Network Planning → It involves making an estimate of the tasks involved in a project. It takes into consideration the critical and non-critical activities and manages them.
* Gantt Chart → It is just like a bar chart that specifies the start and end date of the different activities associated in a project. It also shows the dependencies within a project.
* Microsoft Project → It is the most popular project management software developed and sold by Microsoft. The application is designed to assist in developing strategies, allocating resources, maintaining track, handling budgets and workload amongst the group.

b) The various dependencies associated in a project are:

* Mandatory → Like a team is dependent on executives for their approval to start a project.
* Internal → The testing team is dependent on the developer to finish the prototype.
* External → The team is dependent on the client for their documentation approval.
* Discretionary →

Question 5.

Answer 5. A business case is a well-document display and description of several aspects of a project. The viewpoints range from an introduction, cost-benefit examination, proposal, best solution etc. A business case can include various sections depending upon the organization who creates it. A business case is always produced at the start of a project by a project manager or stakeholders which is later reviewed by the project manager.

b) Every organization requires a business case for a project. So that they can examine the needs, wants and life cycle of the project. It can include several sections depending on the project which the manager sees as essential for its success.

The several sections that the manager controls in a case are:

* Introduction and Background → It is introduced at the beginning of the project's business case. It contains the introduction of the client, their business, hurdles etc. It is designed so that stakeholders and others associated can understand the project. It also assists in recommending proposals and preparing a cost-benefit examination.
* Multiple Solutions → In this section manager explains the various solutions he deems can solve the problem. He gives at least three solutions and recommends one depending upon the benefits, approach, time, resource utilization etc.
* Impacts and Risks Involved → This segment highlights the uncertainty involves within the project in case of failure or delays within a life cycle. How to overcome them? Their level of importance? Whether they should be avoided or mitigated?
* Cost-benefit Analysis → It is crucial to determine the expense of the project. It can be used to investigate both tangible and intangible benefits and cost. Which if examined wrong can lead to the failure of the project.
* Problem Description → In this we describe the hurdles that the client is facing, reasons for them also the impact it had on their business. It is crucial for solution recommendation which is designed based on the description.
* Recommendation → In here the features of the recommended solution is presented with their benefits over the other possible solutions and for the clients.
* Conclusion → It includes a short summary of what will follow the implementation of the software project. The benefits for the clients and how it will impact their brand and market status are stated as well.

Question 6.

Answer 6. Reporting is an essential part of project management. It can be a statement sent to staff, executives, managers etc by the project management for several beneficial reasons such as :

* Progress → It supports the stakeholders and staff members to get the idea of the project state. It can be used to learn about the elements or goals achieved, the resources used, the time required etc.
* Resources Used → It can give detailed information about the resources utilised until that state and capitals being spent on it. It is definitely valuable for the stakeholders and others involved.
* Insight → It can present insights into the development of the project to all the stakeholders and people involved. It can tell about the reason for delays, success, and other factors associated with the project.
* Learning Experience → Project reports can be used as a learning experience for prospective projects. For example with reports from a prior project, we can have better judgment, fewer possibilities of failure and helpful methods on how to deal with it?

b) The five types of written reports that are well-known to every project are:

* To the customers or clients, → The report can be regarding the name, proposal, solutions, business case. It can contain the milestones accomplished and in what order. It keeps the request made by the clients, changes made to the plan, lifecycle phase and problems encountered due to it.
* To the users, → It can contain the name of the project, reason and guide to use it. Some reports can also contain the training to be provided, date and time including additional details like a demonstration, prototyping.
* To the project team → Although it is not the best way of interacting among the groups distributed throughout several sites. It can be less formal with most common things like date, milestones achieved, problems being faced and other things to be kept under consideration etc.
* To the quality assurance function, → It includes the quality assurance methods applied and problems faced. It can also contain quality control activities and their comparisons etc.
* To the business administration, → It can about the milestones achieved, new features requested. It can also contain the difficulties faced by the staff or the user and how to overcome them.

c) The advantages of project manager providing regular reports are:

* Tracking → It helps other members and stakeholders keep a record of the progress and milestones accomplished. It also provides information about the next stages or solutions need to be found.
* Learning → With reporting the next staff members can learn from past experience as with the errors or failures they faced and how to overcome them.
* Estimation → With past reports the team can make a better judgment about the time required for completion or the unforeseen expenses they can face in the earlier stage only.
* Contribution → It can help the manager and leaders keep track of the member's participation. How much effort did they put in for each task? etc.

Question 7.

Answer 7. It is essential for a company to understand the strategy of the clients who will be using its software because of the subsequent reasons:

* Clarity of Action: If we have a good knowledge of an organization’s approach than we can have a clear idea of what they want from us. Also who and how are they going to use it which makes it easier while implementation of the project.
* Flexibility → If the organisation's course of action known than we can have the flexibility of features we should implement in our software. This also increases the recognition of our product by the client.
* Concentrated → If we are knowledgeable about their strategy and work, we can create a determined path for production. With that several resources and time can be preserved by the managers.
* Fewer Changes → In a project there is always a scope of additional features that a client would like to add. But if the strategy to be adopted is clear then there is less scope of changes and delays.
* Easily Integrated → A well thought out product can be easily integrated within their current system which builds the trust and confidence of the client.
* Customer Satisfaction → If the manager knows the client's approach only then the company can produce an optimal solution. With that, the client is more satisfied with the solution and can continue to provide business to the company in the future as well.
* Less resource utilization → If the strategy is recognised than an optimal solution can be manifested. That would mean fewer changes needed and more resources like time and cost can be saved by both the client and the provider.
* Obtaining Result → If the strategy is known that the end solution will be beneficial and can obtain desired results for the clients. This will not only help in the growth of the client's business but also increase their brand value.

Question 8.

Answer 8. The Maslow’s model of the hierarchy is a five-level pyramid which assists in motivating the team so that optimal outcomes can be produced. The various levels can be classified into deficiency and growth needs. Before attaining growth the deficiency needs are to be met. To meet each level the manager can take various actions like:

**To achieve Psychological Needs**

* The manager should make sure people don’t miss out on essentials even when they are working overtime.
* The manager should allow bill-board so that those who have a vacant room or those who are in need can reach.
* They are able to get proper rest. The manager should help staff members in achieving work-life balance.

**To assure safety**

* The manager should ask more full-time opportunities than part-time or casuals.
* They should be handled equally such as other members in case of causing any disturbance at the workplace.
* They should be given day-off in case of injury or accident.
* They should be able to reach medicinal support within the workplace.

**To assure Social Belonging**

* The manager should organize team activities for members to improve social interactions.
* Diverse cultures and festivals should be honoured so that everyone feels valued.
* The manager should arrange monthly get-togethers where people can gather and speak about their experience, what they are striving for ? how many members they have in their family? Etc.

**To improve Self-esteem**

* Each member should be appreciated and recognized for their contribution.
* Invite everyone to offer something to a project so that they don’t feel neglected.
* If employees make any mistake nevertheless recognize their effort.
* Provide them feedback before the actual presentation.

**Achieve Self-Actualization**

* Aid in building a healthy competition among the members of the team.
* Assist employees to understand who they are and what they want to contribute towards.
* Help the team members expand experience in their field of interest.

Question 9.

Answer 9. There are various ways by which stress and conflict can be handled in a positive such as:

* Handling Conflicts → Project managers should be aware that conflicts are bound to happen. Also, they need to address them at the same time. The manager should also help members involved to understand each other’s point of view.
* Organize your Work Place → At the workplace it can be tough to handle work responsibilities with meetings, calls, emails etc. That can make it difficult to manage stress. So for such cases, members should use a to-do list to get better organized.
* Meet Resolution → If disputes cannot be resolved at the meeting that the managers should have another meeting to resolve them. Sometimes unresolved conflicts can lead to delay within a project and inadequate decision making. So for that, another meeting can be a beneficial opportunity for discussing conflicts.
* Short Breaks → It is common to see people distracted by their surroundings and seem tempted to use social media. To avoid distractions we should allow breaks cause an average human concentration level is 30-45 minutes. So instead of letting them find ways to waste time why not let them take a break or walk to get refreshment?
* Teach the value of compromise → Members to need to be taught to make compromise otherwise issues will be not be resolved. Also, members need to be taught to considers each other viewpoint and find mutual ground.
* Ask for Help → It can seem like a major violation in the workplace. As you might seem to be incapable to perform your duties. But getting help should be allowed because of factors like quality, time management, saving resources etc. So if a certain member has an issue that can lead to stress and delays. If help is provided those members should remember the solution as not to waste the time and efforts of others.
* Address each positively → In a conflict it is common for members discovering faults in each other’s solution or idea. But instead, if they were to address positive in their own solution than conflicts can be resolved. This will help to make suitable judgments for the project.
* Adopting Healthy Habits → Smoking, sleeping late, surplus drinking can lead to stress and anxiety which further harm productivity. So managers should encourage healthy habits among their team members for productivity and better health management
* Final Decision Maker → Manager should be able to apply a prejudice answer from those advised. If unable to do so can lead to conflict and stress among the team members.
* Counselling → Manager should have employee assistance programs to assist those facing some troubles within the project. It can help with stress management and unhealthy behaviour.