Reg.No.										

MANIPAL INSTITUTE OF TECHNOLOGY
A Constituent Institute of Manipal University, Manipal

DEPARTMENT OF HUMANITIES & MANAGEMENT
II SEM. M.TECH. ENGINEERING MANAGEMENT
SUBJECT: PROJECT MANAGEMENT (HUM - 5202)
(22/04/2017)

Time: 3 Hours. MAX.MARKS: 50

Instructions to Candidates:

- Answer **ALL FIVE FULL** questions.
- Use of interest table is permitted
- Missing data, if any, may be suitably assumed.

1A) What are the different qualities of an effective project manager (02)

1B) List out commonly traded organizational currencies in context to leading an effective project management. (02)

1C) Problem on Developing project plan (Attached—Q 1C). (06)

2) Read the Case St. Dismas Assisted living facility and write the scope statement indicating all sections (missing data may be assumed and stated explicitly) (10)

3) Read the Case St. Dismas Assisted living facility and
(1) Write preliminary WBS (07)
(2) Is Dr. Splient's a good choice for project manager? Support your position. (03)

4A) Problem on scheduling resources and costs (Attached—Q4A) (05)

4B) Problem on Reducing project duration (Attached—Q4B) (05)

5) Problem on Progress and Performance measurement and evaluation (Attached—Q 5) (10)

Q1 C.

Optical Disk Preinstallation Project

The optical disk project team has started gathering the information necessary to develop the project network—predecessor activities and activity times in weeks. The results of their meeting are found in the following table.

Activity	Description	Duration	Predecessor
1	Define scope	6	None
2	Define customer problems	3	1
3	Define data records and relationships	5	1
4	Mass storage requirements	5	2, 3
5	Consultant needs analysis	10	2, 3
6	Prepare installation network	3	4, 5
7	Estimate costs and budget	2	4, 5
8	Design section "point" system	1	4, 5
9	Write request proposal	5	4, 5
10	Compile vendor list	3	4, 5
11	Prepare mgmt. control system	5	6, 7
12	Prepare comparison report	5	9, 10
13	Compare system "philosophies"	3	8, 12
14	Compare total installation	2	8, 12
15	Compare cost of support	3	8, 12
16	Compare customer satisfaction level	10	8, 12
17	Assign philosophies points	1	13
18	Assign installation cost	1	14
19	Assign support cost	1	15
20	Assign customer satisfaction points	1	16
21	Select best system	1	11, 17, 18, 19, 20
22	Order system	1	21

The project team has requested that you create a network for the project, and determine if the project can be completed in 45 weeks.

C A S E

Q2 & Q3

St. Dismas Assisted Living Facility—1

St. Dismas Medical Center, an urban, nonprofit, 450-bed rehabilitation hospital began to see a significant decline in admissions. St. Dismas' mission focuses on inpatient and outpatient rehabilitation of the severely injured and catastrophically ill. While the patient census varied from month to month, it appeared to the St. Dismas Board of Trustees that the inpatient population was slowly but steadily declining. The hospital's market researchers reported that fewer people were being severely injured due to the popularity of seat belts and bicycle/motorcycle helmets. In order to get a handle on the future of the organization, the Board, and the CEO, Fred Splient M.D. called for a major strategic planning effort to take place.

In January 1999, St. Dismas held a planning retreat to identify future opportunities. The outcome of the retreat was that the Medical Center needed to focus its efforts around two major strategic initiatives. The first, a short-run initiative, was to be more cost-effective in the delivery of inpatient care. The second, a long-run strategy, was to develop new programs and services that would capitalize on the existing, highly competent rehabilitation therapy staff and St. Dismas's excellent reputation in the region.

At the time of the retreat, Fred Splient's parents were living with him and his family. Fred was an active member of the "sandwich generation." His parents were aging and developing many problems common to the geriatric

populace. Their increased medical needs were beginning to wear on Fred and his family. It crossed Fred's mind that life might be more pleasant if the hospital Board approved an expansion of the Medical Center's campus to include an assisted living facility.

In March 1999, Fred had his Business Development team prepare a rough estimate of the potential return on investment of an assisted living facility. He asked the team to identify different options for facility construction and the associated costs. The team also did a complete competitive analysis and examined the options for services to be offered based on St. Dismas's potential population base and catchment area. The Business Development team visited several facilities across the country. The team also interviewed companies that could oversee the design, building, and operation of the facility for St. Dismas. The development team produced a preliminary business plan based on the recommended structure for the facility, estimated capital expenditure needs, estimated income from operation of the facility, as well as projected revenues to other Medical Center programs resulting from the facility's population.

The plan was presented at the May 1999 meeting of the Board of Trustees. Fred Splient and his team introduced the Board to the concept of opening an assisted living facility on St. Dismas's campus. The facility would be set up as a for-profit subsidiary of the Medical Center so that it could generate a profit and not be subjected to the strict guidelines of the hospital's accrediting agencies. As a subsidiary organization, however, the Board would still have control.

The chosen facility design was a freestanding apartment-like facility with a sheltered connection to the Hospital for access to the kitchen and hospital services. The facility would have 100 units with 15 to 30 of the units classified as "heavy-assisted" and built to code to house the physically and medically disabled. The rest of the units would be "light-assisted," larger apartments. The population would be approximately 110 to 150 residents, with most being single occupants rather than couples.

The light-assisted apartments could hold residents who required only minor medical and social interventions. The residents of the heavy-assisted section would have more medical needs and would require assistance getting around. The Business Development team recommended this type of programming model, because many assisted living facilities were erected across the country, but few had a medical focus and offered the types of services that St. Dismas could offer—physical and occupational therapy programs, and behavior management programs to name a few.

The Board was assured that the facility would meet the strategic initiative of a growing business. The business plan projected an immediate increase in the number of referrals to the outpatient therapy programs. Another projected deliverable of the project was to enable St. Dismas to strengthen its focus on reimbursable preventive and wellness programs for the healthier geriatric population. The project's longer term goal was to increase the census in the hospital's inpatient units by having a location where people could age in place until they were in need of hospitalization, and then such a facility would be right next door.

Depending on the exact size of the apartments, their equipment, and the actual ratio of heavy- to light-assisted units, Fred estimated that the entire project would cost between $8,500,000 and $11,000,000 for the facility construction. That estimate included the cost of land, furnishings, and a sheltered connection to the hospital. When up and running, it was estimated that the net income would range between $9,000 and $12,000 per unit per year. The team estimated the net cash flow for the entire project to be around $1,500,000 per year.

Fred requested the Board to approve the concept and allow his team to prepare a pro forma plan to the Board for approval. The plan would include a recommended design for both heavy- and light-assisted apartments. It would also include all costs of land, construction, furnishings, and staffing. Income estimates would be included and would be conservatively biased. A timetable would also be included.

The Board conducted several executive sessions, and by the middle of May voted to approve the concept. They approved the architectural-construction-management firm recommended by the team, and they requested Splient to proceed with developing a complete project plan. The Board appointed two Board members to sit on Fred's planning group.

In June, Dr. Splient gathered his executive team together and presented the project mission, and scope. He reported that the board had approved a small budget to finance the planning process. The Board also stipulated that construction could not begin until after the November 1999 city elections because two of the Board Members were running in that election, one for a city council seat and one as a county commissioner. The Board also stated that they would like a plan that would allow the facility to open by July 2000, as research has shown that many adult children find the summer the easiest time to assist their parents in finding an alternative to independent living arrangements. The CEO and executive team were now confident that they were ready to launch the project to plan, build, and open an assisted living facility at St. Dismas.

A few days later, Fred decided that it was time to set up the team that would take responsibility for what he called the ALF project. He quickly decided to include the following staff at the launch meeting:

- Chief Financial Officer (CFO)
- Vice President of Business Development and Marketing
- Rehab Services Medical Director
- Construction Project Manager for capital facilities projects
- Chief Operations Officer (COO) (nursing, facilities, food services, and housekeeping)
- Director of Information Services
- Director of Support Services (central supply, purchasing, and security)
- Two members of the Board of Trustees, one with construction experience and the other a probable electee to the city council.

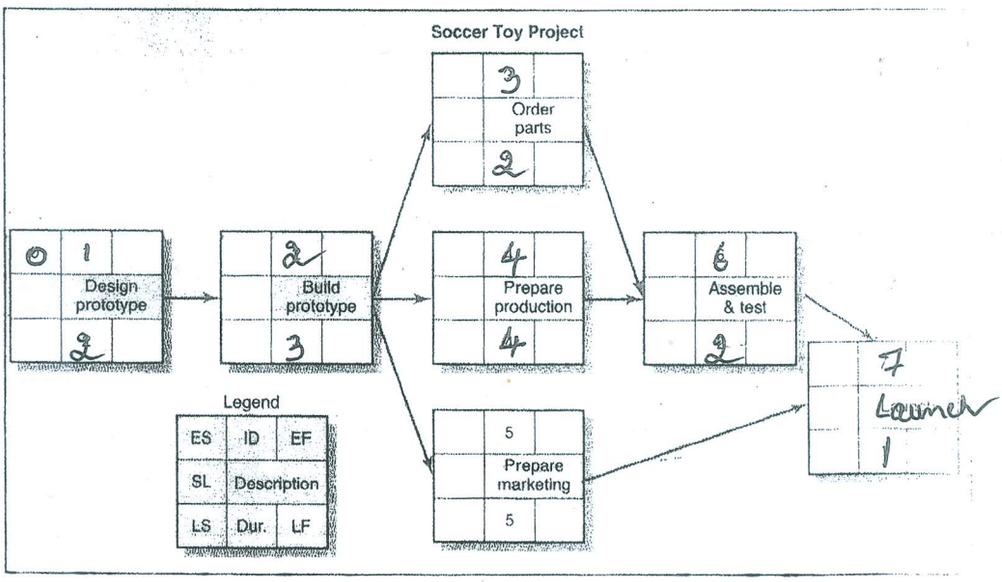
Even though the department directors from Support Services and Information Services would not be involved until later, Fred decided to include them from the beginning. Fred knew some members of his team had a tendency to become obstacles to progress if they felt left out.

Fred named the group the ALF Project Steering Committee and held the first meeting. Fred presented his vision for the facility. He told the group that he personally would be managing this project. He led a discussion of all the major steps that must be included in the project plan, and asked each team member to identify the areas for which they would accept responsibility. The hospital's Construction Project Manager took responsibility for the construction of the facility, and the COO volunteered to oversee the building design, as well as define the needs for food services, housekeeping, staffing, and policy and procedure development. The CFO agreed to develop the budgets for each area of the project as well as the operating budget for the facility. The CFO also agreed to create the payroll and accounting systems necessary to operate the facility.

The IS director accepted responsibility to define and set up all the telecommunications and information system needs of the facility. The VP of Business Development agreed to create a preliminary marketing plan, and a communication package for the community and hospital staff. In addition, she discussed organizing a major ground breaking event. The Medical Director said that he would design an assessment tool for determining residents' level of medical needs upon moving in to the facility. He felt this was the first step in defining what clinical services should be offered to residents. Fred told the team that he would develop the management structure for the new facility and work with in-house counsel to identify all governmental regulations as well as all industry standards that pertain to an assisted living facility and govern the facility's practices. Splient gave the team two months to come back with their detailed action plans for their areas of responsibility.

Q 4A

Given the time-phased work packages and network, complete the baseline budget form for the



Soccer Toy Project

Cost by Week ($00)

	←1	←2	←3	←4	←5
Design	12	12			
Build prototype	10	10	10		
Order parts	5	5			
Prepare production	16	10	22	16	
Prepare marketing	6	6	0	6	12
Assemble & test	18	18			
Launch	12				

Time-phased Budget ($000)

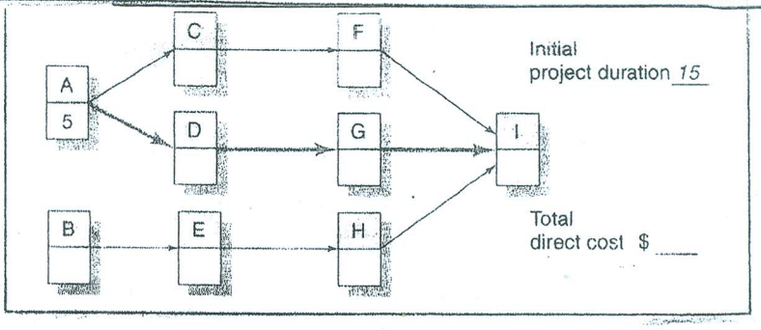
Week

	Budget	0	1	2	3	4	5	6	7	8	9	10	11	12
Design	24													
Build prototype	30													
Order parts	5													
Prepare prod'n	64													
Prepare market'g	30													
Assemble & test	36													
Launch	12													
Total	206													
Cumulative														

4-B

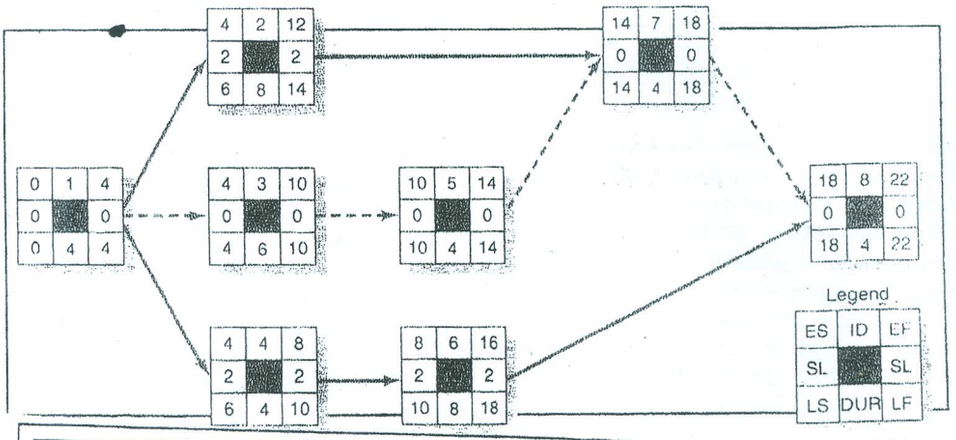
5. Given the data and information that follow, compute the total direct cost for each project duration. If the indirect costs for each project duration are $90 (15 time units), $70 (14), $50 (13), $40 (12), and $30 (11), compute the total project cost for each duration. What is the optimum cost-time schedule for the project? What is this cost?

Act.	Crash Cost (Slope)	Maximum Crash Time	Normal Time	Normal Cost
A	20	1	5	50
B	60	2	3	60
C	0	0	4	70
D	10	1	2	50
E	60	3	5	100
F	100	1	2	90
G	30	1	5	50
H	40	0	2	60
I	200	1	3	200
				$730



Q5

6. The following data have been collected for a British health care IT project for two-week reporting periods 2 through 12. Compute the SV, CV, SPI, and CPI for each period. Plot the EV and the AC on the summary graph provided. Plot the SPI, CPI, and PCIB on the index graph provided. (You may use your own graphs.) What is your assessment of the project at the end of period 12?



Task	Dur.	ES	LF	Slack	PV ($00)	Baseline (PV) ($00) 0 2 4 6 8 10 12 14 16 18 20 22
1	4	0	4	0	8	4 4
2	8	4	14	2	40	10 10 10 10
3	6	4	10	0	30	10 15 5
4	4	4	10	2	20	10 10
5	4	10	14	0	40	20 20
6	8	8	18	2	60	20 20 10 10
7	4	14	18	0	20	10 10
8	4	18	22	0	30	20 10
					Period PV total	4 4 30 35 35 50 30 20 10 20 10
					Cumulative PV total	4 8 38 73 108 158 188 208 218 238 248

Status Report: Ending Period 2

Task	%Complete	EV	AC	PV	CV	SV
1	50%	—	4	—	—	—
Cumulative totals		—	4	—	—	—

Status Report: Ending Period 4

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	10	—	—	—
Cumulative Totals		—	**10**	—	—	—

Status Report: Ending Period 6

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	10	—	—	—
2	25%	—	15	—	—	—
3	33%	—	12	—	—	—
4	0%	—	0	—	—	—
Cumulative Totals		—	**37**	—	—	—

Status Report: Ending Period 8

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	10	—	—	—
2	30%	—	20	—	—	—
3	60%	—	25	—	—	—
4	0%	—	0	—	—	—
Cumulative Totals		—	**55**	—	—	—

Status Report: Ending Period 10

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	10	—	—	—
2	60%	—	30	—	—	—
3	Finished	—	40	—	—	—
4	50%	—	20	—	—	—
5	0%	—	0	—	—	—
6	30%	—	24	—	—	—
Cumulative Totals		—	**124**	—	—	—

Status Report: Ending Period 12

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	10	—	—	—
2	Finished	—	50	—	—	—
3	Finished	—	40	—	—	—
4	Finished	—	40	—	—	—
5	50%	—	30	—	—	—
6	50%	—	40	—	—	—
Cumulative Totals		—	**210**	—	—	—

Period	SPI	CPI	PCIB
2	—	—	—
4	—	—	—
6	—	—	—
8	—	—	—
10	—	—	—
12	—	—	—

SPI = EV/PV
CPI = EV/AC
PCIB = EV/BAC