Software Project Management – Fall 2016

Mid-term Exam

Date: 26th October 2016

Time allowed: 2 hours

Total marks: 50

Answer the following questions. Give details according to the marks and time given.

Q1. Define Scope Creep, Hope Creep, Effort Creep and Feature Creep.
4 marks

Q2. List down the direct costs that a business can have.
3 marks

Q3. From the given data calculate the payback period, net profit, ROI and NPV using 10% discount rate. Remember to show your working:
6 marks

Year	Cash flow
0	-250,000
1	50,000
2	50,000
3	50,000
4	100,000
5	150,000

Table 3.3 Table of NPV discount factors

	Discount rate (%)					
Year	*5*	*6*	*8*	*10*	*12*	*15*
1	0.9524	0.9434	0.9259	0.9091	0.8929	0.8696
2	0.9070	0.8900	0.8573	0.8264	0.7972	0.7561
3	0.8638	0.8396	0.7938	0.7513	0.7118	0.6575
4	0.8227	0.7921	0.7350	0.6830	0.6355	0.5718
5	0.7835	0.7473	0.6806	0.6209	0.5674	0.4972
6	0.7462	0.7050	0.6302	0.5645	0.5066	0.4323
7	0.7107	0.6651	0.5835	0.5132	0.4523	0.3759
8	0.6768	0.6274	0.5403	0.4665	0.4039	0.3269
9	0.6446	0.5919	0.5002	0.4241	0.3606	0.2843
10	0.6139	0.5584	0.4632	0.3855	0.3220	0.2472
15	0.4810	0.4173	0.3152	0.2394	0.1827	0.1229
20	0.3769	0.3118	0.2145	0.1486	0.1037	0.0611
25	0.2953	0.2330	0.1460	0.0923	0.0588	0.0304

Q4. Draw the Step-wise project planning approach. 10 marks

Q5. When should the waterfall model be preferred over other approaches and why?
2 marks

Q6. What are the two types of prototyping? When should each of them be used?
4 marks

Q7. Draw the Atern (DSDM) process model. Describe it in 4-6 lines.
6 marks

Q8. a) Below is a data flow model for a function within the *SafeHome* software. Calculate the unadjusted Albrecht Function Points for the given user interaction function, assuming that all components are of low complexity.
11 marks

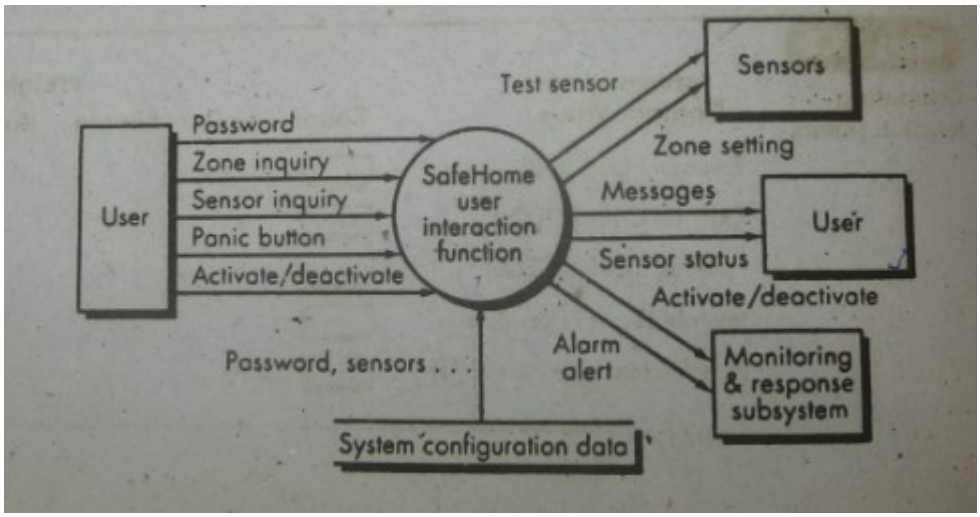

Table 5.2 Albrecht complexity multipliers

	Multiplier		
External user type	*Low*	*Average*	*High*
External input type	3	4	6
External output type	4	5	7
Logical internal file type	7	10	15
External interface file type	5	7	10
External inquiry type	3	4	6

Q8. b) Using these function points and Capers Jones rules of thumb, calculate the **calendar months** required to complete the development of this function.

2 marks

Q9. A project was initially planned to be completed in 24 months and its effort was estimated to be 1000pm. Due to competition, the management decided to finish the project earlier within 18 months. What is the new effort required for the project in pm (person-months), according to Putnam's research.

2 marks