

MCA-302
Software Engineering
Mid-semester exam, September 2018

Full Marks:15

Time: 1 hour

1. What do you understand by Software Crisis? (2)
2. Explain how both the waterfall model and prototyping model can be accommodated in the spiral process model. What is the advantage of the spiral model? (5)
3. Draw the Data Flow Diagram (DFD) for a University Registration System. (Up to Level 1). (4)
4. A new project with estimated 600 KLOC system has to be developed. The software reliability required (RELY) for the product is very high. Project manager has a choice of hiring from two pool of developers:
 Pool A- High analyst capability (ACAP), high programming capability (PCAP) and very less programming experience (LEXP).
 Pool B- Low analyst capability (ACAP), low programming capability (PCAP) and high programming experience (LEXP).

Which pool of developers is the project manager likely to choose & why? (4)

Project	a_i	b_i	c_i	d_i
Organic	3.2	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	2.8	1.20	2.5	0.32

Cost Drivers	RATINGS					
	Very low	Low	Nominal	High	Very high	Extra high
Product Attributes						
RELY	0.75	0.88	1.00	1.15	1.40	1.65
DATA	--	0.94	1.00	1.08	1.16	--
CPLX	0.70	0.85	1.00	1.15	1.30	1.65
Personnel Attributes						
ACAP	1.46	1.19	1.00	0.86	0.71	--
AEXP	1.29	1.13	1.00	0.91	0.82	--
PCAP	1.42	1.17	1.00	0.88	0.70	--
VEXP	1.21	1.10	1.00	0.90	--	--
LEXP	1.14	1.07	1.00	0.95	--	--