SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
SEPTEMBER 2013 SESSION

SUBJECT CODE	:	**FIB 36103**
SUBJECT TITLE	:	**PROJECT MANAGEMENT**
LEVEL	:	**BACHELOR**
TIME / DURATION	:	**(2 ½ HOURS)**
DATE	:	

INSTRUCTIONS TO CANDIDATES

1.   Please read the instructions given in the question paper CAREFULLY.

2.   This question paper is printed on both sides of the paper.

3.   Please write your answers on the answer booklet provided.

4.   Answer should be written in blue or black ink except for sketching, graphic and illustration.

5.   This question paper consists of TWO (2) sections. Section A and B. Answer all questions in Section A. For Section B, answer three (3) questions only.

6.   Answer all questions in English.

THERE ARE 9 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

Choose the correct response for each question below:

(a)   Which one of the following is NOT a characteristic of a Project?

      A.   Temporary nature
      B.   Familiarity
      C.   Risk
      D.   Uniqueness

              (2 marks)

(b)   Which one of the following types of Project Managers has an absolute authority to direct and control subordinates and resources of an organization without sharing it with any functional managers?

      A.   Project Expeditor
      B.   Project Coordinator
      C.   Matrix Manager
      D.   Pure Project Manager

              (2 marks)

(c)   What is the first step in project management?

      A.   Organizing the project budget.
      B.   Writing the project objectives.
      C.   Defining the project.
      D.   Building a project team.

              (2 marks)

(d)   Which of the following are characteristics of successful project managers?

      A.   Organization and flexibility.
      B.   Ability to stick to the plan no matter what.
      C.   Ability to take on the majority of the project work.
      D.   None of the above.

              (2 marks)

(e)   Suppose you are in charge of a project and you notice that one of your team members is assigned to do a disproportionately large amount of the work. What would you do?

      A.   Talk to the team member to see whether he needs help.
      B.   Plan to reassign some of the team member's tasks.
      C.   Take on some of the tasks yourself.
      D.   None of the above.

              (2 marks)

Question 2

(a)   List and describe **three (3)** primary elements of project management.

(6 marks)

(b)   List down and describe **two (2)** important skills needed for an effective project manager?

(4 marks)

Question 3

(a)   What is a critical path?

(2 marks)

(b)   Explain **two (2)** main differences between "CPM - Critical Path Method" and "PERT – Program Evaluation Review Technique"?

(4 marks)

(c)   Construct an AON Network based on project data shown in Table 1 below.

(4 marks)

Table 1: Project X

Activity	Description	Preceded by
a	Task a	-
b	Task b	-
c	Task c	-
d	Task d	a
e	Task e	b, c
f	Task f	b, c
g	Task g	b, c
h	Task h	c
i	Task i	g, h
j	Task j	d, e

Question 4

(a)   Briefly define what is "RISKS" from the context of project?

(4 marks)

(b)   Briefly describe **three (3)** major components of the "Risk Management" process.

(6 marks)

SECTION B (Total: 60 marks)

INSTRUCTION: Answer three (3) questions only.

Please use the answer booklet provided.

Question 5

Figure 1 show an AOA network logic diagram. The activity duration is measured in days.
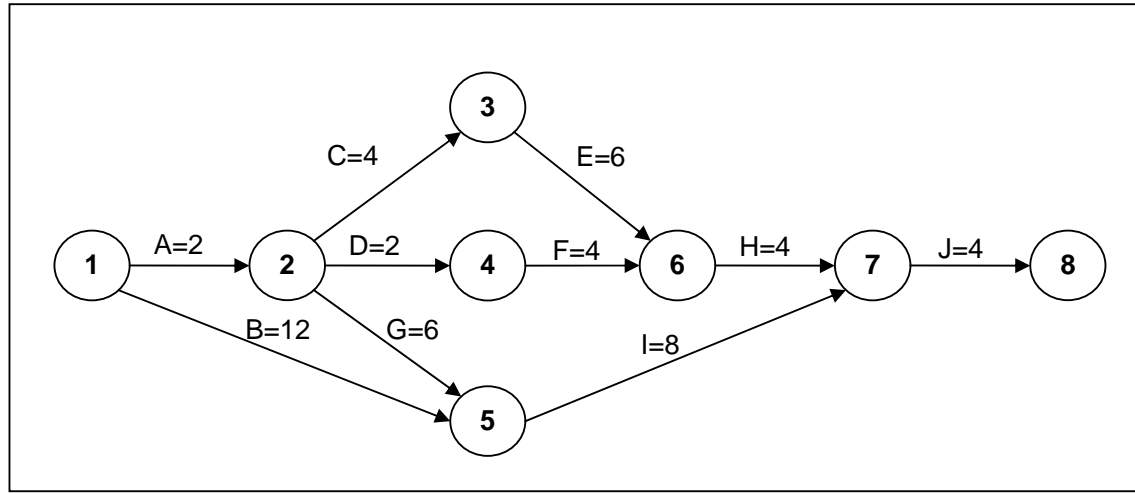

Figure 1: AOA Network logic diagram

(a)   Answer the following questions:

   i.   List down all the possible path activities.

(1 mark)

   ii.   Determine the Critical Path and calculate total duration of the project?

(1 mark)

(b)   Calculate Latest Occurrence Time (LOT), Earliest Occurrence Time (EOT) and Float
         for **Event** as tabulated in Table 2.

(8 marks)

(c)   Calculate Latest Starting Time (LST), Earliest Starting Time (EST) and Float for
         Activity as tabulated in Table 3.

(10 marks)

(Note: *Students are required to copy Table 2 and Table 3 into the answer booklet*)

Table 2: LOT, EOT and Float for <u>Event</u>

Event	LOT	EOT	Float / Slack
1			
2			
3			
4			
5			
6			
7			
8			

Table 3: LST, EST and Float for <u>Activity</u>

Activity	LST	EST	Float / Slack
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			

Question 6

Given the optimistic estimate (t_o), most likely estimate (t_m) and pessimistic estimate (t_p) as shown in **Table 4**, based on the positively skewed beta probability distribution in PERT (Project Evaluation & Review Technique).

(a)   Calculate:

   i.   Expected activity duration (t_e).

(4 marks)

   ii.   Standard deviation (σ_e) of the expected duration.

(4 marks)

   iii.   Variance (σ_e)^2 of the expected duration.

(4 marks)

(b)   Assuming that the critical Path is P-Q-T-W = 55 days

(Refer to Appendix A1 and A2 – Areas under the standard normal curve):

i.   What is the probability the project will be completed before the scheduled time (T_s) of 50 days (*nearest estimated number*)?

(4 marks)

ii.   What is the probability the project will be completed before the scheduled time (T_s) of 57 days (*nearest estimated number*)?

(4 marks)

(Note: *Students are required to copy Table 4 in the answer booklet*)

Table 4: Time Scale

Activity	Optimistic time t_o	Most Likely time t_m	Pessimistic time t_p	Expected time t_e	Standard Deviation σ_e	Variance $(\sigma_e)^2$
P	3	6	9			
Q	6	9	24			
R	15	27	45			
S	2	5	14			
T	17	29	47			
U	5	8	17			
V	4	10	28			
W	5	8	11			

Question 7

From the following CPM (Normal and Crash - time in day) as shown in Table 5:

(a)   Construct a network logic diagram (AOA format) and identify the critical path.

(4 marks)

(b)   Determine the total duration and the total cost of the project (Normal time cost combination)?

(4 marks)

(c)   By implementing the "Crash" time/cost combination:

   i.   Demonstrate the reduction of total networking (using AOA diagram and Gantt chart)

(4 marks)

   ii.   Propose the shortest total duration which can be reduced?

(2 marks)

   iii.   Calculate the total new cost of the project?

(2 marks)

(d)   In Project Resource Allocation, briefly define the difference between "Normal" time/cost combinations versus "Crash" time/cost combination

(4 marks)

Table 5: CPM (Normal & Crash)

Activity	Precedence	Duration, Periods		Cost (RM)		Slope (Cost / Period)
		Normal	Crash	Normal	Crash	
M	-	3	2	25	35	10/-1 = - 10
N	M	6	4	40	80	40/-2 = - 20
O	M	10	9	30	45	15/-1 = - 15
P	M	11	7	25	75	50/-4 = - 12.5
Q	N	8	6	50	80	30/-2 = - 15
R	O,P	5	4	20	35	15/-1 = - 15
S	Q,R	6	6	35	35	-

Question 8

Answer the following questions by refer to **Table 6: Time Scale for Project X** and **Table 7: Project X's report after 10 days of execution.**

Table 6: Time Scale for Project X

Activity	Predecessors	Duration	Activity	Predecessors	Duration
A	-	2	H	D	9
B	A	7	I	F, G	12
C	A	10	J	F	5
D	A	4	K	E, J	5
E	B	6	L	G, H	6
F	B, C	5	M	F, H	4
G	C, D	8	N	I, K, L, M	3

Table 7: Project X's report after 10 days of execution.

No	Description
1	Activities A and D are complete.
2	Activity B started on day 5. Remaining duration = 2 days.
3	Activity C started on day 2. Some problems were encountered. Remaining duration = 4 days.
4	The duration for activity F was adjusted to 8 days.
5	Activity J has been cancelled.
6	The duration for new activity P is 4 days; predecessor is activity E and successor is activity K.

(a) Construct a network logic diagram using AON format and determine the total project duration.

(5 marks)

(b) Based on the report from Table 7, construct the updated AON network and determine the project total duration.

(10 marks)

(c) List out all the possible path activities using the answer from Question 8(b).

(5 marks)

Appendix A1

Table Z: Areas under the standard normal curve (negative Z)

				Second decimal place in z						
0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	0.00	z
									* 0.0000	-3.9
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-3.8
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-3.7
0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	-3.6
0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	-3.5
0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	-3.4
0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	-3.3
0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	-3.2
0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010	-3.1
0.0010	0.0010	0.0011	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0013	-3.0
0.0014	0.0014	0.0015	0.0015	0.0016	0.0016	0.0017	0.0018	0.0018	0.0019	-2.9
0.0019	0.0020	0.0021	0.0021	0.0022	0.0023	0.0023	0.0024	0.0025	0.0026	-2.8
0.0026	0.0027	0.0028	0.0029	0.0030	0.0031	0.0032	0.0033	0.0034	0.0035	-2.7
0.0036	0.0037	0.0038	0.0039	0.0040	0.0041	0.0043	0.0044	0.0045	0.0047	-2.6
0.0048	0.0049	0.0051	0.0052	0.0054	0.0055	0.0057	0.0059	0.0060	0.0062	-2.5
0.0064	0.0066	0.0068	0.0069	0.0071	0.0073	0.0075	0.0078	0.0080	0.0082	-2.4
0.0084	0.0087	0.0089	0.0091	0.0094	0.0096	0.0099	0.0102	0.0104	0.0107	-2.3
0.0110	0.0113	0.0116	0.0119	0.0122	0.0125	0.0129	0.0132	0.0136	0.0139	-2.2
0.0143	0.0146	0.0150	0.0154	0.0158	0.0162	0.0166	0.0170	0.0174	0.0179	-2.1
0.0183	0.0188	0.0192	0.0197	0.0202	0.0207	0.0212	0.0217	0.0222	0.0228	-2.0
0.0233	0.0239	0.0244	0.0250	0.0256	0.0262	0.0268	0.0274	0.0281	0.0287	-1.9
0.0294	0.0301	0.0307	0.0314	0.0322	0.0329	0.0336	0.0344	0.0351	0.0359	-1.8
0.0367	0.0375	0.0384	0.0392	0.0401	0.0409	0.0418	0.0427	0.0436	0.0446	-1.7
0.0455	0.0465	0.0475	0.0485	0.0495	0.0505	0.0516	0.0526	0.0537	0.0548	-1.6
0.0559	0.0571	0.0582	0.0594	0.0606	0.0618	0.0630	0.0643	0.0655	0.0668	-1.5
0.0681	0.0694	0.0708	0.0721	0.0735	0.0749	0.0764	0.0778	0.0793	0.0808	-1.4
0.0823	0.0838	0.0853	0.0869	0.0885	0.0901	0.0918	0.0934	0.0951	0.0968	-1.3
0.0985	0.1003	0.1020	0.1038	0.1056	0.1075	0.1093	0.1112	0.1131	0.1151	-1.2
0.1170	0.1190	0.1210	0.1230	0.1251	0.1271	0.1292	0.1314	0.1335	0.1357	-1.1
0.1379	0.1401	0.1423	0.1446	0.1469	0.1492	0.1515	0.1539	0.1562	0.1587	-1.0
0.1611	0.1635	0.1660	0.1685	0.1711	0.1736	0.1762	0.1788	0.1814	0.1841	-0.9
0.1867	0.1894	0.1922	0.1949	0.1977	0.2005	0.2033	0.2061	0.2090	0.2119	-0.8
0.2148	0.2177	0.2206	0.2236	0.2266	0.2296	0.2327	0.2358	0.2389	0.2420	-0.7
0.2451	0.2483	0.2514	0.2546	0.2578	0.2611	0.2643	0.2676	0.2709	0.2743	-0.6
0.2776	0.2810	0.2843	0.2877	0.2912	0.2946	0.2981	0.3015	0.3050	0.3085	-0.5
0.3121	0.3156	0.3192	0.3228	0.3264	0.3300	0.3336	0.3372	0.3409	0.3446	-0.4
0.3483	0.3520	0.3557	0.3594	0.3632	0.3669	0.3707	0.3745	0.3783	0.3821	-0.3
0.3859	0.3897	0.3936	0.3974	0.4013	0.4052	0.4090	0.4129	0.4168	0.4207	-0.2
0.4247	0.4286	0.4325	0.4364	0.4404	0.4443	0.4483	0.4522	0.4562	0.4602	-0.1
0.4641	0.4681	0.4721	0.4761	0.4801	0.4840	0.4880	0.4920	0.4960	0.5000	-0.0

* For values of z ≤ -3.90, the areas are 0.0000 to four decimal places

Appendix A2

Table Z: Areas under the standard normal curve (positive Z)

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.7	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.8	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.9	* 1.0000									

* For values of z ≥ 3.90, the areas are 1.0000 to four decimal places

END OF QUESTIONS