STRATHMORE BUSINESS SCHOOL

MASTER OF AGRIBUSINESS MANAGEMENT

END OF SEMESTER EXAMINATION

MMA 8105: PROJECT PLANNING & MANAGEMENT IN AGRIBUSINESS

Date: Saturday, 27th February 2021 **Time: 3 hours**

Instructions

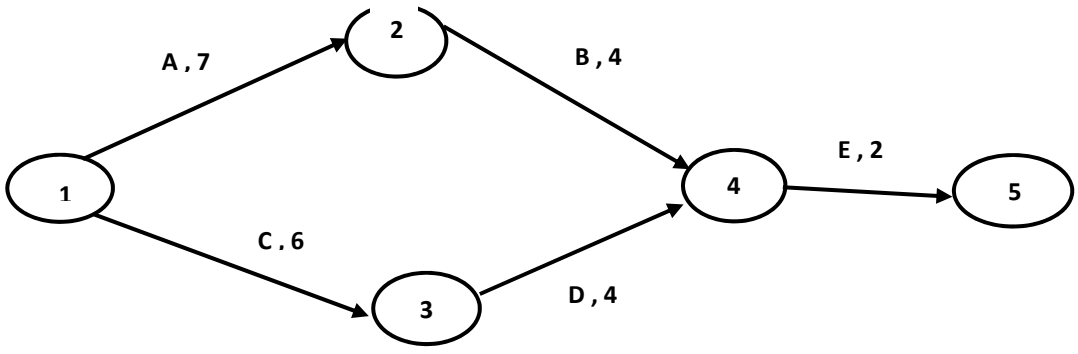
1. This examination consists of FIVE questions.
2. Answer Question ONE and ANY OTHER THREE questions.
3. You are expected to work independently

Question 1 [compulsory] (25 Marks)

a) A Project can be defined by its unique characteristics that distinguish it from routine day to day work. List and briefly explain any four project characteristics. **(8 Marks)**

b) Briefly explain why it is important for the Project Manager to possess knowledge and skills on how to "crash project activities". **(2 Marks)**

c) Consider the following network for conducting a two-week (10 working days) Agribusiness training:



i) From the network, what is the critical path (by activities, e.g. X – Y - Z) and the expected project completion time in days? **(3 Marks)**

ii) Table 1 gives the *Normal cost / Crash cost* details for the same network;

Table 1: Normal cost / Crash cost details for proposed computer training class

Activity	Minimum crash Time (days)	Crash cost (total)	Normal Time (days)	Normal Cost	Crash cost – Normal cost	Normal time – Minimum crash time	Crash cost per day
A	4	$ 740	7	$500			
B	2	400	4	200			
C	4	900	6	500			
D	1	860	4	200			
E	1	550	2	300			

Calculate for each activity the;

Crash cost – Normal cost

Normal time – Minimum crash time

Crash cost per day

Which activities should be crashed, and by how many days, so as to meet the expected project deadline of 10 days at minimum cost? **(4 Marks)**

iii) Draw the final *Activity on Arrow* network after crashing to arrive at the expected project completion of 10 days. What is the new critical path by activities, e.g. X – Y – Z?
(4 Marks)

d) What managerial precautions should be taken into account while crashing a project?
(4 Marks)

Question 2 (25 Marks)

A proposed Agribusiness financing project being considered by a venture firm in Kenya has the following activities and durations;

Activity	Optimistic Time	Most Probable	Pessimistic Time
1-2	3	6	15
1-6	2	5	14

2-3	6	12	30
2-4	2	5	8
3-5	5	11	17
4-5	3	6	15
6-7	3	8	31
5-8	1	4	7
7-8	3	17	37

a) Draw an activity on Arrow (AOA) diagram, and please show the critical path. **(5 marks)**

b) Calculate the probability of finishing the project in i) Not more than 43 days **(5 marks)**

ii) Not less than 30 days **(5 marks)**

iii) Not more than 47 days **(5 marks)**

c) How would you approach this specific problem if you had near critical paths of similar risk than the so called official critical path? Explain. **(5 marks)**

Note: Probabilities for the standard normal distribution are given as ***Appendix 1*** on the last page.

Question 3 (25 Marks)

Project stakeholders need to be effectively managed, and failure to recognize their potential power at the projects strategic level may lead to serious problems at the advanced stages of project planning and implementation.

a) Briefly discuss who you understand "Project Stakeholders" to be, giving examples from any project you are familiar with. **(6 marks)**

b) Using a practical project example that you are familiar with, describe how you would develop a Project Stakeholder Management Strategy, indicating the main issues / questions you will address. **(10 Marks)**

c) Describe the differences between a Matrix Project Management structure and a Pure Project Management structure, giving an example in each case where each structure would be appropriate. **(4 Marks)**

d) Explain what mutually exclusive projects are? Give an example in Agribusiness. **(5 Marks)**

Question 4 (25 Marks)

a) A firm is considering funding a project that will cost $500,000 to implement. The project is estimated to have annual cash flows of $75,000. The company is very concerned about their cash flows, and would prefer projects that payback within five years. Using the payback period method, advice the company on whether to go ahead with the project or not **(5 Marks).**

b) Project scope statement is an important document in a project. Describe what it is, and how you can use it to discourage scope creep in a project **(5 Marks).**

c) A key concept in Project Management is the concept of Triple Constraints. Discuss this concept and provide an example that demonstrates how a change in one constraint affects the other two constraints **(7 Marks).**

d) A critical part of your role as a Project Manager or a Manager in your business is Communication. In some businesses within the Agricultural sector, you may have to work with and communicate with employees with lower level of skills. Discuss and explain how you can communicate effectively. **(8 Marks)**

Question 5 (25 Marks)

a) In Agribusiness projects, use of contractors may at times be beneficial to the project as compared to using permanent staff. List and explain five ways in which use of contractors could be of benefit to the project. **(5 marks)**

b) In most Project environments, project team members build a lot of contingency (fat) reserves on estimates of activity time, then waste it. Indicate and explain 2 ways in which Project time is wasted. **(6 marks)**

c) Illustrate with a sketch, and explain how a project buffer may be used to protect the project time. **(5 marks)**

d) You have been assigned as the Project Manager tasked with planting trees on the plot of land behind the company's new coffee factory. The plan is as follows: -

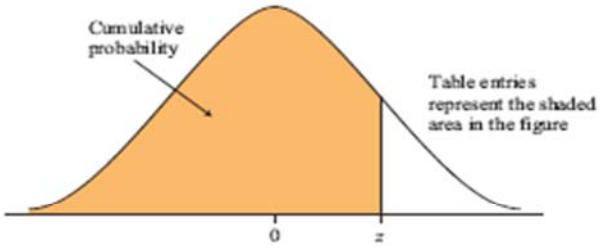
30 batches of 20 trees (600 trees) to be planted, 5 batches per day (100 trees). The budgeted cost per tree is Kshs. 290 (Kshs. 250 per baby tree plus Kshs. 40 for the slow release fertilizer).

The total budget provided is Kshs. 174,000. After the first day only 70 trees have been planted (the team hit a patch with stones that had to be removed before the trees could be planted). The total cost spent was Kshs 35,000 for the first day (the team had to rent a special machine to help remove the stones which cost Kshs 14,700 for the day). You are required to report to the steering committee on performance and determine how much time and cost remain. Required: Using the various Earned Value Management (EVM) formulas, determine the following for inclusion into the Project report;

i) Cost Variance at the end of day one (amount in Ksh.) **(3 Marks)**
ii) Schedule Variance (amount in Ksh.) **(3 Marks)**
iii) Estimated cost at project completion (Ksh.) **(3 Marks)**

Appendix 1: Probabilities for the Standard Normal Distribution

Cumulative Probabilities for the Standard Normal Distribution



FIRST DIGIT OF z	SECOND DIGIT OF 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