NATIONAL UNIVERSITY OF LESOTHO

BSC ENVIRONMENTAL HEALTH &
BSC NUTRITION
END OF SEMESTER EXAMINATIONS

EHS 4307/NUT 4306: PROJECT MANAGEMENT AND ENTREPRENEURSHIP

TIME: 3 HOURS

TOTAL MARKS: 100

REQUIREMENT

Writing utilities

INSTRUCTIONS

- Answer **any four out of five** questions in any order of your preference.
- Question One consists of 13 multiple choice questions – specific instructions are provided in this question.
- Start a new question on a fresh/new page.
- Do not write in margins, margins must be reserved for examiners.
- Only pens should be used for writing.
- Show all your workings where calculations are involved.
- Failure to follow any of this instruction may result in loss of marks.

<u>PAPER CONSISTS OF</u>

Eight typed pages including the cover page

QUESTION ONE [25 Marks]

Instructions: In each of the following questions, choose the most appropriate answer from the options provided. Each question weighs 2 Marks, except question 13, which weighs only 1 Mark.

1. As a project manager, you are in the process of establishing the total scope of the effort in the project to define the project objectives. For this purpose, you include relevant stakeholders and explore all the aspects of scope, cost, time, risk, quality, etc. Which process group of the project are you currently in?

   A. Initiation
   B. Planning
   C. Execution
   D. Monitoring and Control

2. You are developing the project charter for the new project assigned to you. Which of the following is NOT part of the enterprise environmental factors?

   A. Lessons learned from previous projects
   B. Work authorization system
   C. Government and industry standards that affect your project
   D. Knowledge of which departments in your company typically work on projects

3. A project activity has values for the earliest and latest date it can start and earliest and latest it can be completed. An activity's Late Start (LS) is day 5 and Late Finish is (LF) day 10. Similarly, Early Start (ES) is day 3 and Early Finish (EF) is day 8. What is the float/slack of this activity?

   A. 5 days
   B. 4 days
   C. 2 days
   D. 3 days

4. Which one of the following is the last step of project closing?

   A. Archive Project Documents
   B. Measure customer satisfaction at the end of the project
   C. Reallocate facilities and equipment, and release project resources
   D. Document lessons learned

5. A project manager is studying the business documents and going through the narrative description of products and services to be completed by the project. He is also meeting key stakeholders and subject matter experts to evaluate whether or not the project is worth the required investment. Which of the following documents would be created as an output in the process?

A. Project Scope Statement
B. Project Charter
C. Project Management plan
D. Stakeholder Register

6. Which of the following can be found in the project charter?

   A. Instructions and organizational standards; how projects are initiated
   B. Functional and non-functional requirements
   C. Product acceptance criteria
   D. Measurable project objectives and related success criteria

7. Your project has created new knowledge. Together with the team you have recorded challenges and problems, and recommended action plans associated with these situations. In which of the following project documents should you include this kind of content?

   A. Project Management Information System (PMIS)
   B. Lessons learned repository
   C. Organization process assets
   D. Lessons learned register

8. You are discussing economic models for project selection. What is the disadvantage of payback period?

   A. There is no disadvantage; many companies use these models for project selection
   B. They do not consider high profits in later periods
   C. They are simple to calculate
   D. They do not consider sunk costs

9. Project managers spend the largest portion of their time doing what?

   A. Managing risks
   B. Working Scheduled tasks
   C. Communicating
   D. Updating the project plan

10. A project manager performs a feasibility study to define the scope and develop a first estimate to commit financial resources. Which process group is he in?

    A. Initiating
    B. Planning
    C. Executing

D. Closing

11. You are holding a formal, approved document that defines how the project is executed, monitored, and controlled. This document is:

    A. The project management plan
    B. The work breakdown structure
    C. The scope statement
    D. The performance measurement baseline

12. Cost benefit analysis, weighted scoring models, payback period and internal rate of return are examples of _____.
    A. Benefits measurement methods when selecting a project
    B. Integral parts of project control
    C. Ways to ensure stakeholders acceptance
    D. Mathematical models (constrained optimization)

13. Which of these is not one of the constraints of a project?
    A. Scope
    B. Resources
    C. Team
    D. Budget

QUESTION TWO   [25 Marks]

(a) One term which is commonly used throughout the life of a project is stakeholder(s).

    (i)   Define the term stakeholder as used in project management. **[2 Marks]**

    (ii)   Explain what is meant by stakeholder management and describe how the project manager ensures stakeholder co-operation.   **[5 Marks]**

    (iii)   Outline the **three** steps involved in stakeholder analysis.   **[6 Marks]**

(b) Two ways in which the project manager may add value to their team and to their organisation is through **delegation** and **effective communication**. Describe delegation and effective communication in this context.   **[4 Marks]**

(c) Explain what "influencing without authority" means as it applies to skills that an exceptional project manager should have? Give an example of a situation where you or someone else have used this skill in life.   **[4 Marks]**

(d) One of the key skillsets that a good project manager must have is **flexibility**. Describe how having a project manager who lacks this skill is likely to affect the success of the project s/he is shepherding.   **[3 Marks]**

(e) What is the main purpose of conducting a feasibility study?   **[1 Mark]**

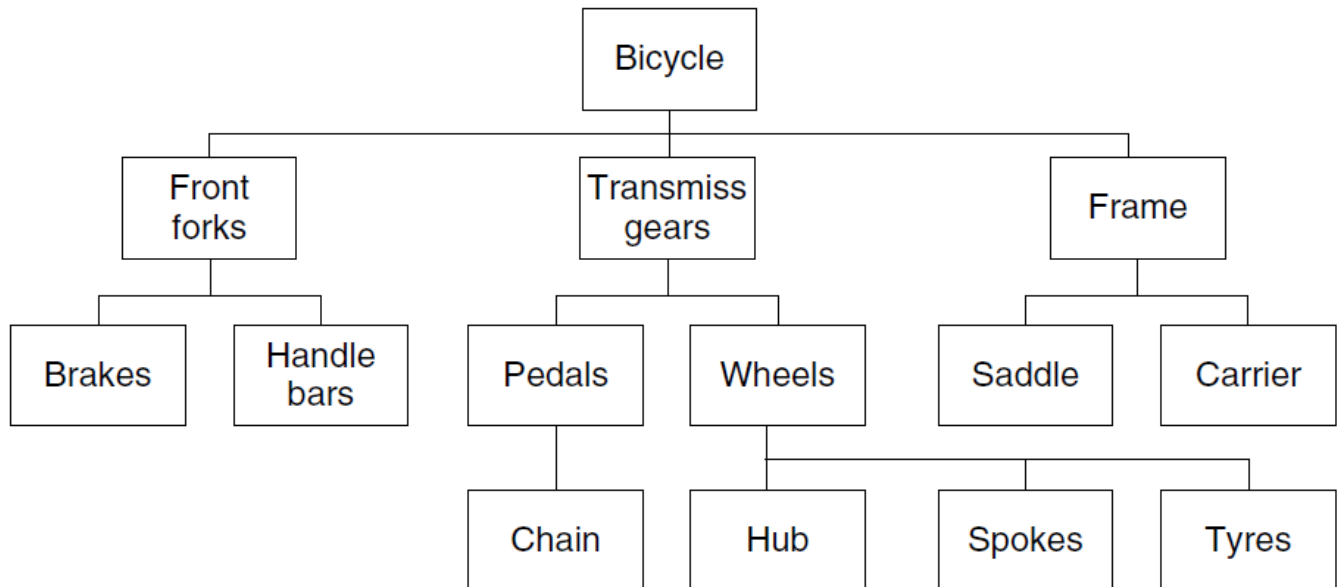**QUESTION THREE**   **[25 Marks]**

(a) Describe the qualities of a leader, especially in a project environment.
                                                                             [5 Marks]

(b) Consider the following diagram which is used by a bicycle manufacturer.

   (i)   What is the full name of this project planning tool?   **[2 Marks]**
   (ii)   Explain any **two** benefits of using this tool in project planning.
                                                                             [4 Marks]
   (iii) Compare and contrast between this project planning tool and a Gantt
              chart.   **[6 Marks]**

(c) Outline any **one** importance of project closure.   **[2 Marks]**

(d) Outline any **one** reason why project execution is required.   **[2 Marks]**

(e) Which Project Management Knowledge area considers execution phase of
       the project lifecycle, and has the Direct Project Work, Manage Project Work
       and Manage Project Knowledge processes?   **[2 Marks]**

(f) State any **one** purpose served by a project charter.   **[2 Marks]**

QUESTION FOUR [25 Marks]

(a) Explain what steps a project manager must take to ensure a smooth project close out and handover. **[5 Marks]**

(b) Two projects, A and B, are competing for funding. Project A requires M70 000 of funding and is expected to make M100 000 in two (2) years, while project B requires M80 000 of funding and is expected to make M120 000 in three (3) years. The cost of capital is approximately 15% per annum. Which project represents a better investment? Justify your answer with numerical calculations. **[7 Marks]**

(c) During the conduction of project management group project, one group of students decided to use the scoring model (weighted scoring model) during the project selection and prioritization stage of their project initiation phase. Their results are presented in the table below.

Criteria	Weight	P-A score	P-A totals	P-B score	P-B totals	P-C score	P-C totals	P-D score	P-D totals	P-E score	P-E totals
Financial benefits	5	5	25	3	15	2	10	3	15	4	20
Resource Availability	4	x	16	3	12	2	8	4	16	1	4
Risk mitigation	3	2	6	3	9	1	3	3	y	2	6
Ease to produce	5	5	25	5	25	2	10	5	25	2	10
Marketability	2	2	4	2	4	2	4	2	4	2	4
Weighted Score	-	-	**76**	-	**65**	-	z	-	**69**	-	**44**

NB: P-A represents project A.

(i) How many projects were competing for selection? **[1 Mark]**
(ii) Which project was first selected for execution? Give a reason for your answer. **[2 Marks]**
(iii) Calculate the values of x, y, z. **[5 Marks]**
(iv) Describe how the scoring model of project selection and prioritization works. **[5 Marks]**

QUESTION FIVE [25 Marks]

The activities of a project have the durations (in weeks), dependencies (predecessors) and resources (operatives) summarized on the table on the next page.

Activity	Duration (weeks)	Dependency	Resource (operatives/week)
A	2	–	3
B	4	A	6
C	6	B	4
D	3	A	2
E	7	B & D	8
F	5	C	5
G	2	F	4
H	1	C & E	6
J	4	E	8
K	6	H	3
L	3	J	2
M	2	K & L	4
N	4	G & K	5
O	2	N & M	6
P	2	O	2

(a) Draw a **neat** activity network diagram (AoA or AoN).   **[5 Marks]**
(b) Determine and state the project duration.   **[7 Marks]**
(c) Calculate the slack (total float) for each activity.   **[6 Marks]**
(d) From (C) above,state the critical path for this project.   **[2 Marks]**
(e) The following information is also known pertaining to this project.
 1. The project must be completed within 30 weeks (**Due date**).
 2. The variances for some of these activities are known and are summarized in the table below.

Activity	A	B	C	E	H	K	N	O	P
Varience	0.50	0.72	1.3	1.12	0.16	0.81	0.69	0.39	0.39

 3. The normal distribution table is attached on the last page of this document.
 (i)   Calculate the project variance.   **[2 Marks]**
 (ii)   Calculate the confidence level (probability) that this project will be completed by the due date.   **[3 Marks]**

STANDARD NORMAL DISTRIBUTION: Table Values Represent AREA to the LEFT of the Z score.

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.50000	.50399	.50798	.51197	.51595	.51994	.52392	.52790	.53188	.53586
0.1	.53983	.54380	.54776	.55172	.55567	.55962	.56356	.56749	.57142	.57535
0.2	.57926	.58317	.58706	.59095	.59483	.59871	.60257	.60642	.61026	.61409
0.3	.61791	.62172	.62552	.62930	.63307	.63683	.64058	.64431	.64803	.65173
0.4	.65542	.65910	.66276	.66640	.67003	.67364	.67724	.68082	.68439	.68793
0.5	.69146	.69497	.69847	.70194	.70540	.70884	.71226	.71566	.71904	.72240
0.6	.72575	.72907	.73237	.73565	.73891	.74215	.74537	.74857	.75175	.75490
0.7	.75804	.76115	.76424	.76730	.77035	.77337	.77637	.77935	.78230	.78524
0.8	.78814	.79103	.79389	.79673	.79955	.80234	.80511	.80785	.81057	.81327
0.9	.81594	.81859	.82121	.82381	.82639	.82894	.83147	.83398	.83646	.83891
1.0	.84134	.84375	.84614	.84849	.85083	.85314	.85543	.85769	.85993	.86214
1.1	.86433	.86650	.86864	.87076	.87286	.87493	.87698	.87900	.88100	.88298
1.2	.88493	.88686	.88877	.89065	.89251	.89435	.89617	.89796	.89973	.90147
1.3	.90320	.90490	.90658	.90824	.90988	.91149	.91309	.91466	.91621	.91774
1.4	.91924	.92073	.92220	.92364	.92507	.92647	.92785	.92922	.93056	.93189
1.5	.93319	.93448	.93574	.93699	.93822	.93943	.94062	.94179	.94295	.94408
1.6	.94520	.94630	.94738	.94845	.94950	.95053	.95154	.95254	.95352	.95449
1.7	.95543	.95637	.95728	.95818	.95907	.95994	.96080	.96164	.96246	.96327
1.8	.96407	.96485	.96562	.96638	.96712	.96784	.96856	.96926	.96995	.97062
1.9	.97128	.97193	.97257	.97320	.97381	.97441	.97500	.97558	.97615	.97670
2.0	.97725	.97778	.97831	.97882	.97932	.97982	.98030	.98077	.98124	.98169
2.1	.98214	.98257	.98300	.98341	.98382	.98422	.98461	.98500	.98537	.98574
2.2	.98610	.98645	.98679	.98713	.98745	.98778	.98809	.98840	.98870	.98899
2.3	.98928	.98956	.98983	.99010	.99036	.99061	.99086	.99111	.99134	.99158
2.4	.99180	.99202	.99224	.99245	.99266	.99286	.99305	.99324	.99343	.99361
2.5	.99379	.99396	.99413	.99430	.99446	.99461	.99477	.99492	.99506	.99520
2.6	.99534	.99547	.99560	.99573	.99585	.99598	.99609	.99621	.99632	.99643
2.7	.99653	.99664	.99674	.99683	.99693	.99702	.99711	.99720	.99728	.99736
2.8	.99744	.99752	.99760	.99767	.99774	.99781	.99788	.99795	.99801	.99807
2.9	.99813	.99819	.99825	.99831	.99836	.99841	.99846	.99851	.99856	.99861
3.0	.99865	.99869	.99874	.99878	.99882	.99886	.99889	.99893	.99896	.99900
3.1	.99903	.99906	.99910	.99913	.99916	.99918	.99921	.99924	.99926	.99929
3.2	.99931	.99934	.99936	.99938	.99940	.99942	.99944	.99946	.99948	.99950
3.3	.99952	.99953	.99955	.99957	.99958	.99960	.99961	.99962	.99964	.99965

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