



# UNIVERSITY OF RUHUNA

## Faculty of Engineering

End-Semester 3 Examination in Engineering: July 2016

**Module Number: IS3302**

**Module Name: Society and the Engineer**

**[Three Hours]**

**[Answer all questions, each question carries twelve marks]**

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Q1. Discuss any **three** of the following: [ 250 words each. 4x3 = 12 Marks]

- a) Engineering education, must promote multidisciplinary teamwork, stimulate creativity and critical thinking and foster reflection and self-learning.
- b) The desirable skills and attributes for engineers include understanding engineer's role in society, logically thinking to solve problems, and effective communication.
- c) Society invests with the engineers a trust that they will watch over the well-being of society, including its safety.
- d) Engineering accreditation improves the quality of an academic programme, student learning, and student success based on real evidence.

Q2. Describe any **three** of the following: [ 250 words each. 4x3 = 12 Marks]

- a) The job of the engineer is to combine the knowledge and tools of today with dreams of tomorrow to create the world of the future.
- b) Engineers must possess the ability to design a system or a process to meet desired needs within technical, economic, environmental, social, and political constraints.
- c) Creative problem solvers, seek, discover, question, and test and go through this process many times. Such individuals are the most valuable asset in any industry.
- d) Exposing engineering students to non-technical study areas broaden their skills and increase their job prospects by better meeting industry's requirements.

Q3.

Explain any **three** of the following: [ 250 words each. 4x3 = 12 Marks]

- a) Engineers must serve the society with honesty, impartiality, fairness, and equity, and dedication to the protection of the public health, safety, and welfare.
- b) The real aim of development is to enable human beings to realize their potential, build self-confidence and lead lives of dignity and fulfillment.
- c) Engineers need to be socially responsible when building products and processes for the benefit of the society. Social responsibility requires professional responsibility.
- d) Employers have a moral responsibility to provide a safe working environment for their employees.

Q4. Comment on any **three** of the following: [ 250 words each. 4x3 = 12 Marks]

- a) We need engineers who are responsible in their actions, creative in their thinking, ethical in their lives, and dependable members of their profession.
- b) Self-regulation is a privilege granted to a technically competent engineer to serve the public interest and perform duties according to high ethical standards.
- c) Engineers need to complement technical knowledge with the development of values, and attitudes, that facilitate professional and ethical excellence.
- d) The ethical decision making process shows parallelism to the step-wise engineering design process.

Q5. Write notes on any **three** of the following: [ 250 words each. 4x3 = 12 Marks]

- a) Professional Engineers work to enhance the welfare, health and safety of all while paying due regard to the environment and the sustainability of resources.
- b) A sustainable engineering project meets a need, does not consume unnecessary resources, promotes equity and is culturally appropriate and suitably affordable.
- c) Today's engineers need to adapt technology to the demands imposed by sustainable lifestyles, resource efficiency, pollution prevention and waste management.
- d) Engineering serves as the Calcium of society today. Engineering ensures a healthy and sustainable environment for humankind.

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