



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 3 Examination in Engineering: July 2017

Module Number: IS3302

Module Name: Society and the Engineer

[Three Hours]

[Answer all questions, Each question carries 12 Marks]

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

- Engineering is the creative process of turning abstract ideas into useful and safe physical devices and systems to meet the needs of people.
- An engineering graduate is an effective problem solver, capable of applying logical, critical, and creative thinking to a range of problems.
- Engineering graduates need to work on teams, to be effective communicators, to be socially adept, and to be prepared for leadership roles.
- Engineering graduates need to understand how their work interacts with society and the environment, in order to identify potential challenges, risks and impacts.

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

- The services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare.
- Engineers should keep current in their fields by reading technical literature, participating in continuing education courses, professional meetings and seminars.
- In order to serve the public effectively, engineers must maintain a high level of technical competence as well as adherence to ethical guidelines.
- Engineers need to base decisions and actions on merit, competence, and knowledge, and without bias to race, religion, sex or age.

Q3. Explain any three of the following : [250 words each] [4x3 = 12 Marks]

- a. Professional skills are important to the wellbeing of the society. Professionalism places an ethical demand on practicing engineer.
- b. A professional code of ethics has the goal of ensuring that a profession serves the legitimate goals of all its constituencies: self, employer, profession, and public.
- c. Self regulating status is a privilege granted to engineers to serve the public interest. Engineers are subject to regulation by professional bodies.
- d. Engineer is responsible to make the world a more connected, sustainable, safe, healthy, and a joyous place.

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

- a. Engineers are designers and problem solvers. Engineering programmes therefore invest much time and effort in creating effective problem solvers.
- b. Design problems are open ended and usually vaguely defined. Solving design problems is often an iterative process.
- c. Engineers should adhere to the principles of sustainable development and extend public knowledge and appreciation of engineering and its achievements.
- d. As engineers, we have a professional and legal 'duty of care' to ensure that all our designed products, processes and systems are as safe as is reasonably practicable.

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

- a. The world's resources are finite, and growth that is unmanaged and unsustainable will lead to increased poverty and decline of the environment.
- b. The only hope for sustainable development is a radical shift in societal ethics and culture to population stabilisation and more responsible consumerism.
- c. When young people have decent jobs, political weight, negotiating muscle and real influence in the world, they will create a better future.
- d. Literacy is a basis for lifelong learning and plays a crucial foundational role in the creation of sustainable, prosperous and peaceful societies.