


Part-A [Answer All the Questions] (20 x 1=20 Marks)

- 1) Which of the following is more appropriate for the statement, "Potential that something harmful may occur" :
 - a. Definition of safety
 - b. Definition of risk
 - c. Definition of acceptable risk
 - d. Uncertainty about a product's life
- 2) Event-Tree-Analysis is not characterized by
 - (a) Inductive logic
 - (b) Consequence analysis
 - (c) Proceed forward in time to final accident
 - (d) Proceed back in time for catastrophic accident
- 3) Which of the following is ideal risk a product design can take, considering the costs involved in providing safety?
 - (a) Low risk & high safety
 - (b) High risk & low safety
 - (c) Point of Minimum total cost
 - (d) Highest Acceptable risk
- 4) Consequent analysis in identifying potential hazardous event is:
 - (a) Fault-tree Analysis
 - (b) Event-tree Analysis
 - (c) Failure Mode and Effect Analysis
 - (d) Scenario Analysis
- 5) Identify the type of testing where the risk is identified by testing the component till it fails:
 - (a) Function testing
 - (b) Prototype testing
 - (c) Destructive testing
 - (d) Simulation testing

- 6) The operators blocked all emergency signals that lead to:
- (a) Three Mile island accident
 - (b) Chernobyl nuclear disaster
 - (c) Evacuation system
 - (d) Bhopal Gas tragedy
- 7) "A thing is safe" with:
- (a) Under estimation of risk
 - (b) Over estimation of risk
 - (c) No estimation of risk
 - (d) Risks fully known and judged acceptable
8. Loyalty means:
- (a) Developing personal attention as that of friendship.
 - (b) The quality of being true and faithful in one's support.
 - (c) To promote the aims of profession.
 - (d) Bringing unethical practices of the engineers to the proper authority of action.
9. The code of ethics of professional societies states that an engineer's paramount obligation is to:
- (a) Extend faithful service to employers
 - (b) Protect the public health safety and welfare.
 - (c) Perform only morally possible institutional duties.
 - (d) Exercise their authorities effectively in order to meet company's objectives.
10. One of the followings is not important Conflicts of Interest.
- (a) Apparent conflicts of interest.
 - (b) Enumerative conflict of interest.
 - (c) Potential conflicts of interest.
 - (d) Actual conflicts of interest.

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11. What is meant by kickback?
- (a) Telling something wrong about a person when he is not present.
 - (b) Kickback is another form of bribing.
 - (c) Playing a legitimate role in the normal conduct of a business.
 - (d) Kickback decides the dignity or the vulgarity of the given.
12. Human Rights are the rights possessed:
- (a) To perform moonlighting.
 - (b) By virtue of being people or moral agents.
 - (c) To legalize bribe.
 - (d) To initiate action against ethical relativism.
13. Rights of Conscientious Refusal is the right to:
- (a) Engage in unethical behavior.
 - (b) Have freedom of speech.
 - (c) Warn the public about unusual harms and dangers.
 - (d) Recognize by the principles of an enlightened conscience.
14. Discrimination is defined as:
- (a) Treating people unfairly because of one's sex, race etc.
 - (b) The right granted to an employer to tackle employees.
 - (c) As a morally unjustified treatment of people on arbitrary or irrelevant grounds.
 - (d) Giving preference to majority applicants for job recruitment.
15. Large emission of Sulphur oxides and Nitrous oxides that forms compounds with water in air causes:
- (a) Global Warming
 - (b) Acid Rain
 - (c) Depletion of Ozone layer
 - (d) Green House Effect

16. Which of the following is appropriate for the statement "Actions are morally right when they are approved by law, custom etc":
- (a) Descriptive Relativism
 - (b) Ethical Relativism
 - (c) Moral Relativism
 - (d) Ethical Pluralism
17. Which one is not recommended when wealthy countries do business in less economically developed countries?
- (a) Simply adopt country's safety laws
 - (b) Informed Consent
 - (c) Pay more for extra risks
 - (d) Promoting most good for most people
18. Which ethics is appropriate for the statement "While building a dam engineers should take into account the impact on animals living there":
- (a) Bio-centric ethics
 - (b) Eco-centric ethics
 - (c) Sentient centered ethics
 - (d) Human centered environment ethics
19. Which one of the following moves Engineers away from jobs related to weapons development?:
- (a) Job with high salary
 - (b) Patriotic fever
 - (c) Arms control negotiations
 - (d) Personal Conscience towards violence and destruction it causes
20. Engineers as expert witness can involve themselves in one of the following:
- (a) Hired guns
 - (b) Money bias
 - (c) Ego bias
 - (d) Give expert view on facts in their area of expertise

Part B (Answer Any Five Questions)

(5 x 4 = 20 Marks)

21. What is safe exit? Mention the conditions that are referred to as safe exit.
22. What is meant by Collegiality? Explain the various elements of Collegiality?
23. Define "Whistle blowing" and brief on its four types.
24. What is an acid rain? What is its impact on eco system?
25. Explain the terms (i) Technology transfer (ii) Appropriate Technology.
26. List any eight benefits of Multinational Corporations.
27. Give a brief note on environmental ethics.

Part C (Answer All Questions)

(5 x 12 = 60 Marks)

28. (a). Define Safety and Risk. What are the four categories of risk? Explain the factors that influence the Perception of Risk.
(or)
- 28.(b). Explain risk-benefit analysis and its limitations. What are the ways of reducing risks in engineering applications?
- 29.(a). Explain the terms related to confidential information. State what types of information should be kept confidential.
(or)
- 29.(b). How conflicts arise in engineering projects and explain the role of engineers in resolving those conflicts with methods used and the steps.

- 30.(a). Explain the various techniques used for risk assessment and the different elements of risk perception.
(or)

- 30.(b) What are the four analytical methods for testing the safety of a product? Explain any two methods in detail giving an example for each method.

- 31.(a) What are the virtues of Team Play? Explain the role of virtues over the responsibilities of engineers.
(or)

- 31.(b) What are the essential elements of Intellectual Property Rights (IPRs)? Explain each one of them in detail.

- 32.(a) What is computer ethics? Explain how do you classify the computer ethical problems? State the ten commandments of Computer Ethics.
(or)

- 32.(b) Describe in detail the role of Engineers as Managers, Consultants and Eyewitnesses.

END OF QUESTION PAPER