



FACULTY: ENGINEERING
DEPARTMENT: CIVIL/MECHANICAL/ELECTRICAL
SEMESTER II EXAMINATIONS (JULY 2014)
2013 / 2014 ACADEMIC SESSION

COURSE CODE: CVE 102 *now GNE 102*

COURSE TITLE: ENGINEERING IN SOCIETY

DURATION: 1 1/2 Hours

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INSTRUCTIONS:

1. YOU ARE TO ANSWER ALL QUESTIONS IN SECTION A AND ANY FOUR (4) QUESTIONS IN SECTION B
2. SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING THE EXAM
3. YOU ARE NOT ALLOWED TO BORROW CALCULATORS AND WRITING MATERIALS

CVE 102 EXAM QUESTIONS

SECTION A (20 Marks)

1. The likelihood that a specified undesired event will occur due to the realisation of a hazard is called _____
 - (a) Risk
 - (b) Potential
 - (c) Risk factor
 - (d) Vulnerability

2. A quantifiable level of exposure to risk which is based on expected possibility (Probability) of an impact if disaster should occur is called _____
 - (a) Risk analysis
 - (b) Vulnerability
 - (c) Hazard
 - (d) Accident factor

3. All hazard scenarios kept in the acceptable region of "Tolerability Matrix" are called _____
 - (a) Risk factor
 - (b) Acceptance matrix
 - (c) Vulnerability factor
 - (d) Acceptable safety

4. One of the following is an internationally accredited body which set safety standards?
 - (a) International Electro-technical Commission
 - (b) International Aero safety Institution
 - (c) International Standard forum and safety organization
 - (d) EL Stav

5. Which of the following safety standard is applicable to the Process industry?
 - (a) MIL STD 882D
 - (b) RTCA DO-178B
 - (c) IEC 61511
 - (d) RTCA DO-254

6. The following are **NOT** factors that determine the standard/type of approved safety equipment except _____
 - (a) GDP per capita
 - (b) Safety need
 - (c) Expected monetary value
 - (d) Impact

7. Basically, the general safety kit which protect the sensory organs, the head and foot against negative impacts includes all of the above except _____
 - (a) Helmets
 - (b) Reinforced ankle boot

- (c) Face cap
 - (d) Ear muffs
8. The following terms explains **qualitative probability** of risks except _____
- (a) Extremely improbable
 - (b) Frequency of occurrence
 - (c) reasonably probable
 - (d) most likely to occur
9. Qualitative and Quantitative risk analysis involves all the following processes except _____
- (a) Selection of procedures, methods and data sources
 - (b) A description of risk
 - (c) Mitigating measures
 - (d) Training against disaster
10. Risk is defined as the product of two (2) components. Select the correct option.
- (a) Probability and vulnerability
 - (b) Risk factor and Hazard
 - (c) Consequences and Risk factor
 - (d) Probability and Consequences
11. Select the correct order of steps taken in risk analysis.
- (a) Hazard Identification, Exposure Assessment, Risk Characterization, Hazard Evaluation or Dose-Response Assessment
 - (b) Hazard Identification, Dose-Response Assessment, Exposure Assessment, Risk Characterization
 - (c) Risk Characterization, Hazard Identification, Dose-Response Assessment, Exposure Assessment
 - (d) Risk Characterization, Exposure Assessment, Hazard Identification, Dose-Response Assessment
12. Consequences are usually described qualitatively with words like Catastrophic, Hazardous, Major or Minor. Which of the following best describes the consequences of "Multiple Fatalities"?
- (a) Hazardous
 - (b) Major
 - (c) Catastrophic
 - (d) Minor
13. An objective of Safety Management System is to reduce the risk to acceptable limit. ALARP as used in the safety industry means _____
- (a) As Low as Reasonably Probable
 - (b) As Low as Reasonably Practical
 - (c) As Low as Risk Prevails
 - (d) As Long as Risk Pays

14. The following are ways of categorizing risks except _____
- (a) External Risks
 - (b) Technical Risks
 - (c) Unforeseeable risks
 - (d) Pure risk
15. Information gathering techniques for identifying risks includes the following except _____
- (a) Synthesis analysis
 - (b) Root-cause analysis
 - (c) Assumption analysis
 - (d) SWOT analysis (Strength, Weakness, Opportunity, Threats)
16. In a typical risk register, the following items are documented with the exception of one.
- (a) List of potential responses
 - (b) Updated risk categories
 - (c) List of risks
 - (d) Anonymous data
17. The 'perform quantitative risk analysis' process involves numerically analysing the probability and impact of risks moved forward from qualitative risk analysis using the following methods except _____
- (a) Delphi Technique
 - (b) Sensitivity analysis
 - (c) Expected Monetary value analysis (EMV)
 - (d) Speculative reverse technique
18. Which of the following best explains the Delphi Technique?
- (a) A technique to analyse and compare the potential impacts of identified risks
 - (b) A method to achieve consensus amongst experts who participate anonymously
 - (c) uses simulation techniques to determine all possible options possible to avoid a perceived risk
 - (d) A method used in complex and extremely large projects with several subsets
19. The choices of response strategies for threats include all of the above except _____
- (a) Mitigation
 - (b) Evaluation
 - (c) Avoidance
 - (d) Transfer
20. _____ is a secondary risk.
- (a) They are risks that trigger contingency response
 - (b) They are created as an after effect of a risk response plan
 - (c) They are the most important risk to respond to after a risk analysis is carried out
 - (d) They are risk that remain after risk response planning

SECTION B (40 Marks) ANSWER ANY 4 QUESTIONS ONLY

1. (a) What do you understand by "Military Engineering"?
(b) How does Military Engineering differ from Civil Engineering?
2. (a) Enumerate any five (5) of the major branches of engineering?
(b) In a maximum of 2 sentences, explain the areas of study of each of the major engineering branches you have listed.
3. (a) What is a profession?
(b) i. List any five (5) types of professions you know
ii. Give one example of each type of profession listed in 3b(i) above
4. (a) List the 5 Engineering Cadres in the engineering family
(b) By means of an illustration, show the Pyramid Model of the distribution of engineering personnel, clearly indicating the position occupied by each cadre on the pyramid.
5. (a) What is the full meaning of COREN?
(b) What is the role of COREN in Nigeria?
6. (a) What is Entrepreneurship?
(b) List at least two (2) things to be considered for each of the following:
 - i. Starting your business
 - ii. Growing your business
 - iii. Stabilizing your business
7. (a) What is Engineering?
(b) According to the National Academy of Engineering, there are 19 technological developments of the 20th century considered to be the most important. List any 10 of them