



PROGRAMME : NATIONAL DIPLOMA
MINERAL SURVEYING
MINING ENGINEERING

SUBJECT : **ENGINEERING MANAGEMENT III**

CODE : **MGN32-1**

DATE : SUMMER EXAMINATION 2015
21 NOVEMBER 2015

DURATION : (SESSION 1) 08:30 - 11:30

WEIGHT : 40: 30: 30

TOTAL MARKS : 192

EXAMINERS : MR R SIBANDA (SECTION A)
MR S LUBISI (SECTION B)
MR N NDIWENI (SECTION C)

MODERATORS: MRS D KOHALY (SECTION A)
MR L ZINDI (SECTION B & C)

NUMBER OF PAGES : NINE (09) including cover page

INSTRUCTIONS:

1. READ INSTRUCTIONS IN EACH SECTION CAREFULLY
2. WRITE YOUR LECTURER'S NAME ON YOUR ANSWER SHEET
3. PLAN YOUR TIME CAREFULLY

SECTION A

Read the article “What’s (Really) Behind Gender Imbalance in Tech Careers” before answering the questions. Choose the most correct answer. Write down the question number and correct letter only.

1. Earlier this week Apple released new diversity figure for its US workforce, which revealed women make up only 30 percent of the company, taking up 20 percent of tech roles and 28 percent of leadership positions. These are numbers CEO Tim Cook says he is “not satisfied with.” Meanwhile, at Google, 30 percent of global employees are women. But only 17 percent of tech roles and 21 percent of leadership positions are filled by women. At Facebook, women constitute 31 percent of employees but fill only 15 percent of tech positions and 23 percent of senior level roles. Stats at Twitter, Yahoo and Intel—all of whom should be commended for voluntarily disclosing these employment figures—are surprisingly similar.
2. Companies that enable or encourage fratboy, brogrammer antics—be that in the form of tasteless jokes or rude lingo or general narrow-mindedness—actively alienate women from their workforce. How they can possibly afford to do so—when tech talent is so hard to come by—is another matter altogether. As entrepreneur and advocate Dan Shapiro notes, “To literally handicap yourself by 50 percent is insanity.” Given the apparent pervasiveness of this kind of antagonistic environment, it’s little wonder that a gender imbalance persists. But there’s another side to this story—obviously related but distinct—that also needs to be told.
3. A major part of the reason there’s a gender disparity in tech is that there are so few women applying for tech positions. Currently, 1 out of every 10 people interviewed for a tech role at our office, 9 are men. I don’t think this is unusual. In other words, it’s not necessarily that women are being screened against in job interviews; it’s that there aren’t a lot of female applicants out there to begin with.
4. The numbers bear this out. Over the past two decades, the percentage of bachelor’s degrees awarded to women in almost all science and technology fields has increased, sometimes dramatically—with one important exception. “Computer science actually is more male-dominated today than it was two decades ago,” writes the New York Times’ science columnist Catherine Rampell. In 1991, women received 29.6 percent of computer science bachelor’s degrees in the U.S.; in 2010, they received just 18.2 percent.
5. Something is deterring young women from entering the field in the first place. But when is this happening and why? By the time girls are in high school, tech has often already been ruled out as a career option. Only 1 percent of high school girls express an interest in majoring in computer science in university, according to a report from the American Association of University Women.
6. Clearly, making headway on gender imbalance requires getting more girls interested in computer science at an earlier age. This isn’t a quick fix or an easy one. It involves rewriting perceptions of programming as a “boys’ thing” and showing that rewarding careers await women as well. Fortunately, there’s a growing movement afoot to do just that.

inShare.com 2014

SECTION: A

QUESTION 1: Multiple Choice

1. Which of the following options is an example of social media?
 - (i) Facebook
 - (ii) Google
 - (iii) Twitter
 - (iv) Intel
 - A. i only
 - B. ii and iii
 - C. i, ii and iii
 - D. All of the above
2. CEO is an abbreviation for:
 - A. Chief Executive officer
 - B. Chief Execution Officer
 - C. Chief Examination Officer
 - D. Chief Excellent Officer
3. In the context of the article, the word “tech’ in paragraph 1 refers to:
 - A. Technical
 - B. Technocratic
 - C. Technology
 - D. Techno-graphic
4. The phrase ‘brogrammer antics’ is associated with which word below?
 - A. Masculinity
 - B. Feminist
 - C. Computer-programming
 - D. Narrow-mindedness
5. This article is centred in a:
 - A. Capitalist Economy
 - B. Socialist Economy
 - C. Communist Economy
 - D. Sexist Economy
6. The main purpose of the article is to:
 - A. Empower women in the workplace
 - B. Provide employment equity figures
 - C. Address gender imbalances in the workplace
 - D. Demonstrate gender disparities in the workplace

7. 'Diversity' in the context of paragraph 1 most likely refers to:
- A. Antagonistic
 - B. Disparity
 - C. Imbalance
 - D. Pervasiveness
8. Dan Shapiro's message in paragraph 2 is that companies must:
- A. Refine their language policy
 - B. Employ more women
 - C. Sensitise themselves to all needs of employees
 - D. Develop technical skills of all employees
9. According to Shapiro, the reason for gender disparity in tech is:
- A. There is discrimination in the workplace
 - B. Few women have the relevant qualifications
 - C. Women fear applying for tech jobs
 - D. Few women apply for the positions
10. Which of the following is the writer's suggestion in addressing the disparities?
- (i) Getting girls interested in computer science at an early age
 - (ii) Changing boy's perceptions that programming is a boys' thing
 - (iii) Making girls aware that tech is a lucrative career
 - (iv) Encouraging more women to apply for the tech jobs
- A. i and iv only
 - B. ii and iii
 - C. i and iii
 - D. All of the above

Question 11-20 relate to the syllabus

11. The economic principle implies that:
- A. Production factors are widespread and readily available
 - B. Businesses must minimize need satisfaction with the maximum amount of production factors
 - C. Communities must not use production factors in establishing businesses.
 - D. Communities must be selective as production factors are scarce
12. Objectives of an enterprise include:
- A. Supporting the community
 - B. Quality products and profit
 - C. Paying suppliers on time
 - D. All of the above

13. In a free market system:
 - A. There is no motivation to make a profit
 - B. Production factors belong to the state
 - C. Anyone has the right to make a profit
 - D. No competition between enterprises is permitted
14. South Africa's economic system is:
 - A. Completely socialist
 - B. A controlled free market
 - C. An ANC controlled system
 - D. A free market system
15. Currently, Mining jobs are scarce because of:
 - A. Marikana
 - B. Union disputes
 - C. Load shedding
 - D. General unemployment
16. Which of the following could be affecting the value of the South African currency?
 - A. EFF
 - B. ANC
 - C. High fuel prices
 - D. Crime and corruption
17. The market environment includes:
 - A. Consumers and competitors
 - B. Social and cultural forces
 - C. Political and statutory variables
 - D. Production factors
18. The macro environment includes:
 - A. Competitors
 - B. Suppliers of resources
 - C. Macro market factors
 - D. Economic conditions
19. Which of the following options is most correct relating to the market environment when establishing the location of an enterprise?
 - (i) Absence of competitors
 - (ii) Personal considerations
 - (iii) Sufficient water and power
 - (iv) The market and availability of labour

- A. i only
- B. ii only
- C. iii only
- D. iii and iv

20. Which of the following is/are not part of the micro environment?

- A. Share holders
- B. The Board of Directors
- C. Labourers
- D. The Rand/Dollar exchange rate

[20]

QUESTION 2: Case study

Question2 : Essay

Write a mini essay of ONLY ONE page on one of the topics below. Marks will be awarded for both content and style. Do not make vague statements that are not supported with facts.

2.1 According to Blake and Mouton's theory of leadership, which grid positions are most likely to decrease production levels in the Mining Environment? Justify your answer by expressing which positions as a manager you would likely prefer. [20]

OR

2.2 Select one of South Africa's greatest entrepreneurs you have studied and discuss how this entrepreneur responded by taking risks in establishing his/her enterprise. [20]

Sub-total = 40 Marks

SECTION B: Labour Relations

N.B: You can answer the questions in any sequence that suits you, BUT do not inter-mix sub-questions. Follow the same numbering system used and use a *separate* answer sheet/book for this Engineering Management section. Underline to demarcate the end of your question.

Question 1

- 1.1 Define dismissal and mention the three types of automatic unfair dismissals. (5)
- 1.2 What remedies would you expect as an employee/defendant in the arbitration or labour court proceedings for unfair dismissal and unfair labour practice where you were found to have been unfairly dismissed or unfairly treated? (3)
- 1.3 List any six first time dismissible offences. (3)

Question 2

- 2.1 Define retrenchment (2)
- 2.1 Section 189 of Labour Relations Amendment Act, No 12 of 2002 requires that when an employer contemplates dismissing one or more employees for reasons based on the employer's operational requirements, the employer must consult. Who should be consulted? (3)
- 2.2 The Act further requires the employer to issue a written notice inviting the other consulting party to consult with it and disclose in writing all relevant information. What other unlimited information should the employer disclose to the other consulting party regarding dismissal based on operational requirement? (10)
- 2.3 Propose any four measures that should be considered before dismissal based on operational requirement (4)

Question 3

- List and briefly discuss all eight (8) sources or forms of power. (16)

Sub-total = 46 Marks

SECTION C: Risk Management

QUESTION 1

ABC Behavioural model (antecedents, behaviour, consequences); how would you mould the work culture using activators, competencies and consequences [10]

QUESTION 2

In your own words explain the inner change (transformation) process [18]

QUESTION 3

Explain the differences and similarities on traits of a reckless and timid employee [8]

QUESTION 4

By use of a table below, give a mining example on HIRA [16]

Hazard	Controls	Responsible	Completion time

QUESTION 5

What are the general issues to be considered when civil explosives have to be destroyed [12]

QUESTION 6

As mitigation after an incident/accident; the following words (escape, evacuate, survive and rescue) can be used; give practical examples for underground emergencies using the same words. [12]

QUESTION 7

Give an example on how you could use a fault/logic tree analysis to reduce risk in underground workings. [6]

QUESTION 8

You are to set up a department on your mine to eliminate harmful substances from within the mining lease. You believe that understanding the risk profile of this department is crucial to the success of the project.

8.1 What is the objective?

8.2 Identify stakeholders for this project.

8.3 List a framework which you can be rated against. [15]

QUESTION 9

What is the difference between pure risk and speculative risk [9]

Sub-total = 106 Marks

GRAND TOTAL= 192
