PAKISTAN ENGINEERING COUNCIL

Sample MCQs

Mining Engineering

(Mine Management and Regulatory Regime)

Please read all the instructions carefully and do not start the paper unless asked to do so.

1. Fill in your particulars (Name, Roll Number, PEC Registration Number, CNIC and Discipline) in BLOCK letters in the space provided.

2. You are not allowed to change your seat during the test.

3. Hand over your answer sheet to the invigilator at the end of each part and keep seated until allowed to leave the centre.

4. The examination is divided into three Parts viz Part-I, Part-II and Part-III, with 30 minutes break.

5. All questions are to be attempted and carry equal marks.

6. Passing marks for each part is 60%, and passing all three parts is mandatory to qualify EPE.

7. Use only the provided pencil to fill completely the correct choice circle on answer sheet.

8. Programmable calculator, laptop, mobile phone, iPod, and any storage device/electronic gadget are not allowed.

9. No extra sheet will be provided; any calculation may be worked out on the back of the paper.

10. No candidate is allowed to indulge in any Law and Order situation to affect the exam process, and responsible(s) will be disqualified.

11. Use of unfair means will also lead to disqualification.

Instructions for Part-I

This part is common to all disciplines, comprising 30 multiple choice questions of one mark each (Total Marks=30) with the duration of two hours.

Instructions for Part-II

This is a discipline based open book breadth examination, comprising 30 multiple choice questions of one mark each (Total Marks=30), with the duration of two hours.

Instructions for Part-III

This is a discipline based open book depth examination comprising 40 multiple choice questions of one mark each (Total Marks=40), with duration of three hours. The candidates will be allowed only for the specialized filed / area of practice, for which already applied at the time of application.

Mining Engineering
(Mine Management and Regulatory Regime)
Part-I

Total Marks: 30   **Total Time: 2 hours**

Name:	S/o, D/o, w/o:
Roll Number:	PEC Reg#:
CNIC:	Discipline:

- -

Q.1: Quality control is aimed at:

    a. Maintaining the desired quality
    b. Exceeding the desired quality
    c. Continuously improving the quality
    d. Following the quality

Q.2: Which of these is correct with respect to a product developed or a service performed?.

    a. Bad quality is acceptable, but bad grade is not.
    b. Bad grade is acceptable, but bad quality is not.
    c. Neither bad grade nor quality is acceptable.
    d. Grade and quality is the same thing.

Q.3: Project A has an internal rate of return (IRR) of 21 percent. Project B has an IRR of 7 percent. Project C has an IRR of 31 percent. Project D has an IRR of 25 percent. Which of these would be the BEST project?

    a. Project A
    b. Project B
    c. Project C
    d. Project D

Q.4: What characteristic best describes the cost baseline?

    a. Total budget for the project
    b. Time phased budget for the project
    c. Total budget for the project including the contingency budget

d. Total budget for the project including the contingency budget and the management reserve.

Q.5:   Present worth is:

   a. The discounted future cash flows to the present
   b. The compounding present cash flows to the future
   c. The current market value of the investment
   d. The opportunity cost at the present value.

Q.6:   The first preferred way to resolve a dispute between the contracting parties is:

   a. Arbitration
   b. Litigation
   c. Negotiation
   d. Mediation

Q.7:   Following document define the legal rights and obligations of the parties and may be described as the regulations under which the contract will be performed.

   a.   Specifications
   b.   General Conditions of Contract
   c.   Special provisions
   d. Bill of Quantities

Q.8:   The minimum notice period for National Competitive bidding is:

   a. 30 days
   b. 45 days
   c. 35 days
   d. 15 days

Q.9:   Tsunamis' is generated by:

   a. Earthquake
   b. Air currents
   c. Tidal waves
   d. Large Ocean waves

Q.10:   Globalization has direct impact on:

   a. National security
   b. Economy
   c. Society
   d. All above

Q.11:   The passive voice for the sentence "He is writing a letter" is;

   a.   A letter is wrote by him
   b. A letter is written by him
   c. A letter is being written by him
   d. A letter is been written by him

Q.12: Choose the correct sentence

    a. He is elder than me
    b. He is older than me
    c. He is ager than me
    d. He is older than I

Q.13: Effective communication is

    a. The transfer of message from sender to receiver
    b. Sending of massage
    c. Receiving of message
    d. The transfer of message from sender to receiver and get the desired response.

Q.14: Body language is form of;

    a. Personality and attitudes
    b. Non verbal communication
    c. Individual preference for expression
    d. The body expression

Q.15: Project feasibility report is aimed at;

    a. Informing the people
    b. Attracting the customer
    c. Justifying the investment
    d. Giving details of resources

Q.16: Research Proposal synopsis is developed at;

    a. Final stage of research
    b. Initial stage of research
    c. Before approval of research proposal
    d. In the middle of research

Q.17: Project monitoring is required:

    a. Before commencement of the project
    b. During implementation of the project
    c. After completion of the project
    d. At any stage of the project deemed necessary

Q.18: Re-appropriation Statement is form of

    a. Progress report
    b. Budget report
    c. Financial report
    d. Normal report

Q.19:   PC-III (A) is used for

   a.   For weekly progress report of public sector projects
   b.   Monthly progress report of public sector projects
   c.   Yearly progress report of public sector projects
   d.   Quarterly progress report of public sector projects.

Q.20:   Acquiring management and leadership skills are _____ for a
   Professional Engineer

   a.   Wastage of time
   b.   Not important
   c.   Highly important
   d.   Not necessary

Q.21:   Engineering ethics refers to:

   a.   The rules and standards given by an institution for Engineering practice
   b.   The rules and regulation relating to obligations and rights of others.
   c.   The professional regulation
   d.   The rules and standards which govern the conduct of Engineers as professional
        Engineers.

Q.22:   How many commandments are given in PEC Code of Ethics?

   a.   20
   b.   30
   c.   10
   d.   05

Q.23:   As per PEC Code of Conduct a member shall report unethical professional practices of
        an engineer or a member with substantiating data to

   a.   Court of Law
   b.   Concerned Department
   c.   Pakistan Engineering Council
   d.   Law enforcing Agency

Q.24:   When a member uses designs, plans, specifications, data and notes supplied to him by
        a client or an employer or are prepared by him in reference to such client or the
        employer's work such designs, plans, specifications, data and notes shall remain the
        property of the _____and shall not be duplicated for any use without the express
        permission of the _____.

   a.   Member, Member
   b.   Client, Client
   c.   Member, Client
   d.   Client, Member

Q.25: As per PEC Code of Conduct to maintain, uphold and advance the honor and dignity of the engineering professional, a member shall do following except:

a. uphold the ideology of Pakistan
b. be honest, impartial and serve the country, his employer, clients and the public at large with devotion.
c. Uphold personal interest first
d. use his knowledge and skill for the advancement and welfare of mankind

Q.26: Conflicts are faced when:

a. There are more than one expected outcomes
b. There are more than one expected benefits and losses
c. There is choice between two or more moral values each having its own merits.
d. There are opposing outcomes.

Q.27: An example of a conflict of interest would be:

a. As a responsible official you make a decision about a contract award that will benefit you personally
b. You and a functional manager disagree with a task cost estimate
c. Your sponsor decides to cancel your project because it no longer supports the company strategy
d. Your personality conflicts with that of a key member of your project team.

Q.28: Adherence to professional ethics is _____ an engineer to society.

a. Not obligation of
b. An obligation of
c. Optional for
d. None of above

Q.29: While designing a project by an engineer, _____should be taken into account to protect cultural heritage

a. All possible alternates
b. No protection
c. Minimum protection
d. No care

Q.30: Close interpersonal relationships are characterized by high intimacy whereas distressed relationships tend to involve reciprocation of _____behaviour.

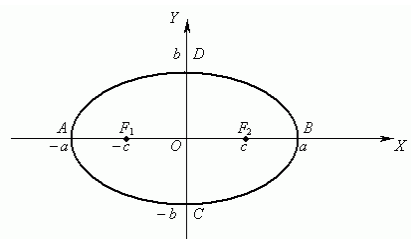a. positive
b. negative
c. normal
d. casual

Answers:

1. a
2. b
3. c
4. b
5. a
6. c
7. a
8. d
9. a
10. d
11. c
12. b
13. d
14. b
15. c
16. c
17. b
18. c
19. b
20. c
21. d
22. c
23. c
24. b
25. c
26. c
27. a
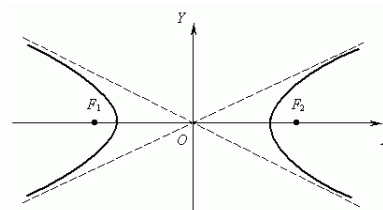28. b
29. a
30. b

Part-II (Breadth of discipline)

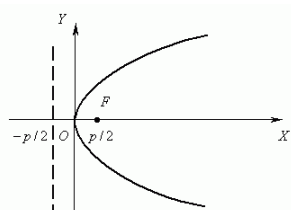**Total Marks: 30**   **Total Time: 2 hours**

Q.1: Which of the following is a hyperbola ?

a.

b.

c.

d. None of the above

Q.2: Integrating $\int \frac{\ln\left(\frac{1}{x}\right)}{x^2} dx$ will result in

a. $\frac{1}{x}\ln\left(\frac{1}{x}\right) - \frac{1}{x} + c$

b. $\frac{1}{x} + c$

c. $-\left(\frac{1}{x}\ln\left(\frac{1}{x}\right) - \frac{1}{x}\right) + c$

d. None of the above

Q.3: The IUPAC name for the compound $CH_3-C\equiv C-\overset{\overset{\displaystyle CH_3}{|}}{CH}-CH=CH_2$ is:

a. 4-vinyl-2-pentyne

b. 4-methylhex-2-yn-5-ene

c. 3-methylhex-4-yn-1-ene

d. 3-methylhex-1-en-4-yne

Q.4: The pH of a carbonated drink is

a. less than 7

b. more than 7

c. equal to 7

d. approximately 7.8

Q.5: Which of the following memories allows simultaneous read and write operations?

    a. ROM

    b. RAM

    c. Cache

    d. None of above

Q.6: When all the numbers between 0 and 100 in a range should be displayed in Red Color, apply

    a. Use if function to format the required numbers red

    b. Select cells that contain number between 0 and 100 then click Red color on Text Color tool

    c. Apply Conditional Formatting command on Format menu

    d. All of above

Q.7: Internal friction occurs in solids material that are subjected to

    a. axial loading

    b. cyclic loading

    c. twisting

    d. dead load

Q.8: If a rigid body rotates with an angular velocity about the axis then the kinetic energy of the body is equal to:

    a. $1/2\ mv2$

    b. $1/2I\omega2$

    c. $I\omega2$

    d. Mv

Q.9: For a state of plane stress with major principal stress equal to 5000 psi minor principal stress equal 2000psi, the absolute maximum principal shearing stress is:

    a. 5000 psi

    b. 3000 psi

    c. 2500 psi

    d. 2000 psi

Q.10: A tensile test specimen has a starting gage length = 75.0 mm. It is elongated during the test to a length = 110.0 mm before necking occurs. Then the engineering strain is closer to:

    a. 0.25

    b. 0.50

    c. 0.75

    d. 1.0

Q.11: Corrosion is a process of:

    a. Reduction

    b. Oxidation

    c. Ozonolysis

    d. Electrolysis

Q.12: Brazing is an operation like soldering but is used:

    a. In iron industries

    b. For jointing alloys

    c. For stronger joints than soldering

    d. For jointing non metals

Q.13: When a pitot tube is inserted in a flow, it intercepts the:

    a. Potential energy

    b. Kinetic energy

    c. Internal energy

    d. Total energy

Q.14: In a reversible adiabatic flow process, the work input is given by:

    a. $\int_1^2 pdv$

    b. $(u_2 - u_1) + \left(\frac{c_2^2}{2} - \frac{c_1^2}{2}\right)$

    c. $(u_2 - u_1)$

    d. $(h_2 - h_1) + \left(\frac{c_2^2}{2} - \frac{c_1^2}{2}\right)$

Q.15: In Petrographic Microscope following type of light is used to study the thin section of an ore/mineral sample:

a. Transmitted light

b. Reflected light

c. Combination of transmitted and reflected lights

d. None of the above three

Q.16: In roasting, sulphide concentrate is treated with very hot air. The sulfide is converted into two compounds, which are given below.

a. A metal oxide and sulfur dioxide

b. A metal and sulfur dioxide

c. A metal oxide and carbon dioxide

d. A metal sulfate and sulfur dioxide

Q.17: The reduction ratio of Jaw Crushers usually varies between:

a. 1:4

b. 1:7

c. 1:10

d. 1:2

Answers:

1. c
2. c
3. d
4. a
5. b
6. c
7. b
8. b
9. c
10. b
11. b
12. c
13. b
14. d
15. a
16. a
17. b