Centre for Coal Technology
Faculty of Engineering & Technology
University of the Punjab, Quaid-i-Azam Campus, Lahore

General Guidelines for Entry Test 2019

1. The composition of the entry test will be as follows;

Section	Marks	Total questions
Verbal Ability	**40**	**40**
Grammar and Spelling (Missing words, Grammar or spelling errors, correct punctuation, Use of adjectives, articles, Active and passive voice, Direct and indirect speech etc.)	15	15
Vocabulary (Antonyms, Synonyms)	10	10
Word Analogy	4	4
Reading Comprehension	6	6
Deductive Reasoning	5	5
Quantitative Ability	**30**	**30**
Arithmetic (properties and types of integers, such as divisibility, factorization, prime numbers, remainders and odd and even integers; arithmetic operations, exponents and roots; and concepts such as estimation, percent, ratio, rate, absolute value, the number line, decimal representation and sequences of numbers)	9	9
Algebra (operations with exponents; factoring and simplifying algebraic expressions; relations, functions, equations and inequalities; solving linear and quadratic equations and inequalities; solving simultaneous equations and inequalities; setting up equations to solve word problems; and coordinate geometry, including graphs of functions, equations and inequalities, intercepts and slopes of lines)	8	8

Data Analysis (basic descriptive statistics, such as mean, median, mode, range, standard deviation, interquartile range, quartiles and percentiles; interpretation of data in tables and graphs, such as line graphs, bar graphs, circle graphs, boxplots, scatterplots and frequency distributions; elementary probability, such as probabilities of compound events and independent events; conditional probability; random variables and probability distributions, including normal distributions; and counting methods, such as combinations)	9	9
Geometry (parallel and perpendicular lines, circles, triangles — including isosceles, equilateral and 30°-60°-90° triangles — quadrilaterals, other polygons, congruent and similar figures, three-dimensional figures, area, perimeter, volume, the Pythagorean theorem and angle measurement in degrees)	4	4
Subject based Questions (Topics mentioned on page 8)	**30**	**30**
Total Marks	**100**	**100**

2. The test duration will be 2 hours.

3. The use of calculators/mobile phones/smart phones, etc. is prohibited.

4. There is no negative marking. All questions are compulsory and carry equal marks.

5. The use of lead pencils/ink removers etc. are not allowed.

6. A separate sheet will be provided with answer sheets for rough work. No markings on question and answer sheets are allowed. Question sheet must be returned along with answer sheets.

7. It is mandatory to mention name and registration/roll no. on answer sheet, otherwise, sheet will not be considered for marking/evaluation.

Centre for Coal Technology
Faculty of Engineering & Technology
Quaid-i-Azam Campus, University of the Punjab, Lahore
MPhil Coal Technology

SPECIMEN ENTRY TEST-2019

Time Allowed: 2 Hours
Marks: 100

Name of Student: _____   Roll. No. _____

Note: Attempt all questions.

VERBAL ABILITY (Total Questions = 40)

Select one of the most appropriate choices given against each question.

1. Ali is _____ for the president of student society this year.
   a. run
   b. running
   c. ran
2. Which of these statements is false?
   a. The subject should usually follow the verb.
   b. The object usually comes after the verb.
   c. When there is an indirect object and a direct object, the indirect precedes the direct.
   d. When the adjective is used attributively it comes before the noun which it qualifies.
3. They continued to work in the field _____.
   d. Even though it rained heavily
   e. Even though there is heavy rain
   f. In spite the heavy rains
   g. Although heavily rains
4. Select antonym of "attract"
   a. Progress
   b. Repel
   c. Shy
   d. Lousy
5. Select synonym of "excel"
   a. Progress

b. Move
c. Slip
d. Word

QUANTITATIVE ABILITY (Total Questions = 30)

Select one of the most appropriate choices given against each question.

1   Question: If $2x + 5y = 18$ and $x = 4$ then what is the value of y?
    a) 2
    b) 3
    c) 4
    d) 5
2   Question: The value of $+ 5x + 6$ at $x = 2$ is?
    a) 2
    b) 20
    c) 40
    d) 10
    e) 15
3   Question: If 8 is 4 percent of k, then k is 4 percent of:
    a) 5000
    b) 4000
    c) 800
    d) 80
4   Question: If a=3, then what is the value of $(a^2)^3 - a$;
    a) 240
    b) 243
    c) 726
    d) 257

SUBJECT BASED QUESTIONS (Total Questions = 30)

Select one of the most appropriate choices given against each question.

1. During combustion coal reacts with_____.

    a. Nitrogen   b. Oxygen   c. Moisture

2. Which one of the followings is a fossil fuel?

    a. Wind   b. Coal   c. Nuclear

3. Coals are _____ to ignite than furnace oil.

    a. Easier   b. Harder   c. Similar

4. When burned, biomass does release _____, a greenhouse gas:

    a. H_2S b. CO_2 c. CH_4

5. Methane has _____ odor.

a. Pungent   b. No   c. Sweet

6. British Thermal Unit is measurement of;

    a. Volume   b. Heat Content   c. Mass

7. Boiling point of Water is;

    a. $32^{\circ}F$ b. $100^{\circ}F$ c. $212^{\circ}F$

8. Percentage of Oxygen in dry air by volume is _____.

    a. 20.95%   b. 21.95%   c. 22.95%

Centre for Coal Technology
Faculty of Engineering & Technology
Quaid-i-Azam Campus, University of the Punjab, Lahore
M.Sc. (Engg.) Energy & Environmental Engineering

SPECIMEN ENTRY TEST-2019

Time Allowed: 2 Hours
Marks: 100

Name of Student: _____   **Roll. No.** _____

Note: Attempt all questions.

VERBAL ABILITY (Total Questions = 40)

Select one of the most appropriate choices given against each question.

2. Ali is _____ for the president of student society this year.
   a. run
   b. running
   c. ran
2. Which of these statements is false?
   a. The subject should usually follow the verb.
   b. The object usually comes after the verb.
   c. When there is an indirect object and a direct object, the indirect precedes the direct.
   d. When the adjective is used attributively it comes before the noun which it qualifies.
3. They continued to work in the field _____.
   d. Even though it rained heavily
   e. Even though there is heavy rain
   f. In spite the heavy rains
   g. Although heavily rains
4. Select antonym of "attract"
   e. Progress
   f. Repel
   g. Shy
   h. Lousy
5. Select synonym of "excel"
   e. Progress
   f. Move

g. Slip

a. Word

QUANTITATIVE QUESTIONS (Total Questions = 30)

Select one of the most appropriate choices given against each question.

1   Question: Ali starts a business with Rs. 80,000/-. His first year profit is 10%. What is the
total amount after first year?
a) 105,600
b) 201,200
c) 500,00
d) 100,00

2   If x/9 is equal to 2/3, then x is equal to;
a) 8/3
b) 6
c) 3
d) 27/2

3   Question: If 3y = 7, the value of 6y-3 is;
a) 39
b) 13
c) 11
d) 10

SUBJECT BASED QUESTIONS (Total Questions = 30)

Select one of the most appropriate choices given against each question.

1. 1 atmospheric pressure is equal to

    a.   760 mmHg   b. 770 mmHg   c. 760 psi   d. 770 psi

2. Which one of the followings is a renewable energy source?

    a. Coal   b. Petroleum   c. Solar   d. Heat

3. Rate of a chemical reaction _____ with an increase in surface area.

    a. increases   b. decreases   c. does not change   d. Remains constant

Resource/Helping Material for Test Preparation

For the preparation of verbal and quantitate sections, books available in market for general ability tests/examination (GAT) can be consulted. Candidates are encouraged to go through following topics/areas for the preparation of subject based questions.

1. Renewable Energy Sources including solar, wind, biomass, hydel etc.

2. Fossil fuels

3. World and regional energy scenario

4. Energy crisis of Pakistan

5. Environmental implications of energy generation

6. Stochiometric calculations