# University of Liberal Arts Bangladesh

## Undergraduate Admission Test
## Sample Question for School of Engineering

| Parts | Question Type | No. of Question | Total Marks |
|---|---|---|---|
| **Part A**:English (Grammar, Vocabulary & Reading Comprehension) | MCQ | 30 | 30 |
| **Part B**: Mathematics | MCQ | 15 | 30 |
| **Part C:** Physics | MCQ | 10 | 20 |
| **Part D**: Test of Writing | Written | 1 | 20 |
| | TOTAL | | 100 |

**Instruction:** The admission test question would consist of 4 parts: the whole admission test will be completed in 1.0 hour. The test is designed to check that candidates have a minimum aptitude in English to cope with ULAB's curriculum. Candidates should bring pen, pencil, sharpener, and eraser. **Calculator will be allowed.**

The sample questions indicate the pattern not the difficulty level of the questions that will appear in the admission test.

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Undergraduate Admission Test
Sample Question Paper

## Part A: English
## (Grammar and Vocabulary)

***Tick the right choice word(s) in the underline part for each blank in the following phrases:***

1. I like to relax as soon as/while/before I'm on holiday. (**Answer: As)**
2. The load is too heavy for me to take/ to bear / to clear/ to convey. (**Answer: To bear)**
3. I'm so worried about Natasha as soon as/while/after you hear any news, phone me. (**Answer: As soon as)**
4. Please be quiet. I try/am trying/tried to concentrate. (**Answer: Am trying)**
5. I am sorry I called you a liar. I take it back/ off/ on/ over. (**Answer: Back)**
6. The River Nile flow/flowing/flows into the Mediterranean. (**Answer: Flows)**
7. The man to who I sold/to whom I sold/to whom I sell my house was a cheat. **(Answer: to whom I sold).**
8. He is too important for tolerating/to tolerate/at tolerating any delay. **(Answer: to tolerate).**

***Antonyms: Tick the correct word which is opposite in meaning:***

1. Enormous: (a) Soft (b) Average (c) Tiny (d) Weak. **Answer: (c)**
2. Relinquish: (a) Abdicate (b) Renounce (c) Possess (d) Deny. **Answer: (c)**
3. Obscure: (a) Transparent (b) Dark (c) Doubtful. **Answer: (a)**
4. Mortal: (a) Divine (b) Immortal(c) Spiritual(d)Eternal. **Answer: (b)**
5. Practical: (a) unrealistic (b) sensible (c) workable (d) realistic. **Answer: (a)**
6. Victorious: (a) Defeated (b) Annexed (c) Destroyed (d) Vanquished. **Answer: (a)**
7. Vanity: (a) Pride (b) Humility (d) Conceit (d) Ostentatious. **Answer: (b)**
8. Capacious: (a) Limited (b) Caring (c) Foolish (d) Changeable. **Answer: (a)**

***Synonyms: Tick the correct word which is similar in meaning:***

1. Attempt: (a) Serve (b) Explore (c) Try (d) Explain. **Answer: (c)**
2. Pacify: (a) Irritate (b) Annoy (c) Mitigate. **Answer: (c)**
3. Glorify: (a) Adore (b) Abuse (c) Depress (d) degrade. **Answer: (a)**
4. Humorous: (a) Serious (b) dull (c) funny (d) gloomy. **Answer: (c)**
5. Retain: (a) Preserve (b) give up (c) surrender (d) abandon. **Answer: (a)**
6. Brief: (a) Limited (b) Small (c) Little (d) Short. **Answer: (d)**
7. Embezzle: (a) Misappropriate (b) Balance (c) Remunerate (d) Clear. **Answer: (a)**
8. Canny: (a) Obstinate (b) Handsome (c) Clever (d) Stout. **Answer: (c)**

## (Reading Comprehension)

***Read the passage carefully and answer the following questions:***

Marie Curie was one of the most accomplished scientists in history. Together with her husband, Pierre, she discovered radium, an element widely used for treating cancer, and studied uranium and other radioactive substances. Pierre and Marie's amicable collaboration later helped to unlock the secrets of the atom.

Marie was born in 1867 in Warsaw, Poland, where her father was a professor of physics. At an early age, she displayed a brilliant mind and a blithe personality. Her great exuberance for learning prompted her to continue with her studies after high school. She became disgruntled, however, when she learned that the university in Warsaw was closed to women. Determined to receive a higher education, she defiantly left Poland and in 1891 entered the Sorbonne, a French university, where she earned her master's degree and doctorate in physics.

Marie was fortunate to have studied at the Sorbonne with some of the greatest scientists of her day, one of whom was Pierre Curie. Marie and Pierre were married in 1895 and spent many productive years working together in the physics laboratory. A short time after they discovered radium, Pierre was killed by a horse-drawn wagon in 1906. Marie was stunned by this horrible misfortune and endured heartbreaking anguish. Despondently she recalled their close relationship and the joy that they had shared in scientific research. The fact that she had two young daughters to raise by herself greatly increased her distress.

Curie's feeling of desolation finally began to fade when she was asked to succeed her husband as a physics professor at the Sorbonne. She was the first woman to be given a professorship at the world-famous university. In 1911 she received the Nobel Prize in chemistry for isolating radium. Although Marie Curie eventually suffered a fatal illness from her long exposure to radium, she never became disillusioned about her work. Regardless of the consequences, she had dedicated herself to science and to revealing the mysteries of the physical world.

**1. The Curies' _____ collaboration helped to unlock the secrets of the atom.**
A. friendly
B. competitive
C. courteous
D. industrious
E. chemistry

**Answer: A**

**2. Marie had a bright mind and a _____ personality.**

A. strong
B. lighthearted
C. humorous
D. strange
E. envious

**Answer: B**

**3. When she learned that she could not attend the university in Warsaw, she felt _____.**
A. hopeless
B. annoyed
C. depressed
D. worried
E. None of the above
**Answer: B**

**4. Marie _____ by leaving Poland and traveling to France to enter the Sorbonne.**
A. challenged authority
B. showed intelligence
C. behaved
D. was distressed
E. Answer not available
**Answer: E**

**5. _____ she remembered their joy together.**

A. Dejectedly
B. Worried
C. Tearfully
D. Happily
E. Irefully

**Answer: A**

## Part B: Mathematics

Q.1If $x^2+y^2=25$ then what is the value of dy/dx at (3, -4)?

(a) 5/6
(b) 3/4
(c) 0
(d) 7/2

Q.2 If (x,y), (2,3) and (5,-1) are on the same straight line then:

(a) 4x-3y-17=0

(b) 4x+3y-17=0
(c) 3x+4y+17=0
(d) 3x+4y-17=0

Q.3 The value of the following integral

$$\int_0^{\pi/2} (1 + cos\ x)^2 \sin x\ dx$$

(a) 1/3

(b) 7/3

(c) 3/7

(d) 4/3

a) Q.4 The value of $\lim_{n\to\infty} \left(\frac{x}{1+x}\right)^x$ is:
b) -∞
c) -1
d) $e^{-1}$
e) e

Q.5 Convert decimal $(115)_{10}$ into binary:

a) 1110111
b) 1101111
c) 1111011
d) (d)1110011

Q.6 What is the value of $\begin{vmatrix} xyz & x & y \\ x & x+z & z \\ y & z & y+z \end{vmatrix}$?

a) $4xyz$
b) $2xyz$
c) (c)0
d) -1

## Part C: Physics

1. What is the frequency of a photon whose energy is 66.3 eV?

   a. $1.6 \times 10^{15}$ Hz
   b. $1.6 \times 10^{16}$ Hz
   c. $1.6 \times 10^{18}$ Hz
   d. $2.6 \times 10^{16}$ Hz
   e. $2.6 \times 10^{15}$ Hz

2. A fan rotates 60 times per minute. What is its angular velocity?

   a. π rad/s
   b. π/2 rad/s
   c. 4π rad/s
   d. 3π rad/s
   e. 2π rad/s

3. A car is moving with an initial speed of 10 m/s and traveled a distance of 500m by 10s. The acceleration of the car is:

   a) 1 $m/s^2$
   b) 2 $m/s^2$
   c) 5 $m/s^2$
   d) 8 $m/s^2$
   e) 10 $m/s^2$

4. In a conductor, 60 C charge flows within 15 seconds. What is the current flow in the conductor?

a) 4 A
b) 5 A
c) 6 A
d) 7 A
e) 8 A

5. What will be the pressure of a gas at $60^0$C temperature, if the pressure of the gas at $0^0$C is 3 x $10^5$ Pa?
   a) $4.66 \times 10^5\ Pa$
   b) $3.66 \times 10^5\ Pa$
   c) $4.66 \times 10^4\ Pa$
   d) $5.66 \times 10^5\ Pa$
   **e)** $6.66 \times 10^5\ Pa$

## Part D: Test of Writing:

Write a paragraph on ‘’Traffic Jam in Dhaka City’’ or ‘’ Role of Social Media in Everyday Life’’

(You will be marked on the correctness of the spelling, grammar, syntax, usage and sentence construction.)