GRAPHIC ERA UNIVERSITY

GRAPHIC ERA COMMON ENTRANCE TEST (GECET)

Sample Test Paper – B.Tech Biotechnology

Total Duration: 120 Minutes (Aptitude plus Domain specific)
Total Aptitude Questions: 50
Total Aptitude Marks: 70
Marks for Domain paper: 30

IMPORTANT INSTRUCTIONS

1. Read each question carefully before answering.

2. All questions are compulsory.

3. There is no negative marking.

4. Use of calculators is not permitted unless explicitly allowed.

Marking Scheme:

- Domain-Specific: 15 Questions × 2 Marks = 30 Marks

- Aptitude: 30 Questions × 1 Mark + 20 Questions × 2 Marks = 70 Marks

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SECTION 1: APTITUDE

(Common Aptitude Sample Questions in a separate document)

SECTION 2: PHYSICS

(5 Questions × 2 Marks = 10 Marks)

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1. Snell's law relates which of the following quantities when light passes from one medium to another?

(a) Wavelength and frequency
(b) Angle of incidence and angle of reflection
(c) Sine of angle of incidence and sine of angle of refraction
(d) Speed of light and intensity

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2. Magnetic flux density (magnetic field) at a point on the axis of a solenoid is given by:

(a) $B = \mu_0 n i$
(b) $B = \mu_0 i / 2r$
(c) $B = \mu_0 i / 4r$
(d) $B = \mu_0 i$

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3. If the wavelength of electromagnetic radiation is doubled, what happens to the energy of photons?

(a) Remains the same
(b) Doubles
(c) Becomes half
(d) Becomes infinite

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4. A child on a swing moves to and fro. If the time taken to move from the mean position to the extreme position is 0.5 seconds, what is the total time period?

(a) 1 second
(b) 2 seconds
(c) 4 seconds
(d) 0.5 second

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5. A unit mass–spring system has force F = −4x, where x is displacement. What is the time period?

(a) 2.14 seconds
(b) 6.28 seconds
(c) 1.56 seconds
(d) 3.14 seconds

SECTION 3: CHEMISTRY

(5 Questions × 2 Marks = 10 Marks)

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6. Which of the following alkenes is used in the manufacturing of plastics?

(a) Butadiene
(b) 1,2-Butadiene
(c) 1,3-Butadiene
(d) 2-Butadiene

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7. Which of the following statements is incorrect about aromatic compounds?

(a) They are planar
(b) They have 4n π electrons
(c) They are cyclic
(d) They are generally less reactive than similarly substituted alkenes

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8. Which of the following alkyl halides undergoes SN2 reaction most rapidly?

(a) CH_3CH_2Br
(b) CH_3CH_2Cl
(c) CH_3CH_2I
(d) CH_3CH_2F

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9. Which of the following is a functional isomer of dimethyl ether?

(a) Ethanol
(b) Methanol
(c) 2-Methylpropanol
(d) None of the above

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10. Which of the following addition reaction is involved in alkenes?

(a) Mercuration
(b) Oxymercuration
(c) Hydroboration
(d) Halogenation

SECTION 4: MATHEMATICS

(5 Questions × 2 Marks = 10 Marks)

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11. The area of a triangle with vertices (x_1, y_1), (x_2, y_2), and (x_3, y_3) is:

(a) $|x_1y_1 + x_2y_2 + x_3y_3|$
(b) $\frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)|$
(c) $|x_1(y_2 + y_3)|$
(d) $\frac{1}{3} |x_1(y_2 - y_3)|$

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12. The inverse of a matrix A exists if and only if:

(a) $A = 0$
(b) $|A| = 0$
(c) $|A| \neq 0$
(d) A is symmetric

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13. Which of the following is an Arithmetic Progression (AP)?

(a) 2, 4, 8, 16
(b) 1, 3, 5, 7

(c) 3, 6, 12, 24
(d) 1, 4, 9, 16

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14. Which measure of central tendency is most affected by extreme values?

(a) Mean
(b) Median
(c) Mode
(d) Range

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15. If the mean of a distribution is 20 and the number of observations is 50, the sum of observations is:

(a) 500
(b) 1000
(c) 1500
(d) 2000

ANSWER KEY

Section 2: Physics

Question No.	Answer
1	c
2	a
3	c
4	b
5	d

Section 3: Chemistry

Question No.	Answer
6	c
7	b
8	c

9	a
10	a

Section 4: Mathematics

Question No.	Answer
11	b
12	c
13	b
14	a
15	b

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