

VITEEE 2021 Question Paper May 28 Slot 4

Time Allowed :90 Minutes	Maximum Marks :80	Total Questions :80
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. The question paper contains a total of 80 questions divided into four parts:
 - Part I: Physics (Questions 1 to 25)
 - Part II: Chemistry (Questions 26 to 50)
 - Part III: Mathematics (Questions 51 to 75)
 - Part IV: English & Logical Reasoning (Questions 76 to 80)
2. All questions are multiple-choice with four options, and only one of them is correct.
3. For each correct answer, the candidate will earn 1 mark.
4. There is no negative marking for incorrect answers.
5. The test duration is 12 hours.

1. Tangents PQ, PR are drawn from P = (5, 0) to the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$. The length of the chord QR is:

- (A) 6/5
- (B) 8/5
- (C) 18/5
- (D) 8/3

2. Arrange the following compounds in order of increasing dipole moment:

I) Toluene II) m-dichlorobenzene III) o-dichlorobenzene IV) p-dichlorobenzene

- (A) I < IV < II < III
- (B) IV < I < II < III
- (C) IV < I < III < II
- (D) IV < II < I < III

3. If $f(x) = x^3 + 2x^2 + 4x + d$, then in $(-\infty, \infty)$:

- (A) f(x) is strictly increasing function
- (B) f(x) has local maxima

- (C) $f(x)$ is strictly decreasing function
(D) $f(x)$ is bounded
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4. An example of Polysaccharide is:

- (A) Maltose
(B) Cellulose
(C) Glucose
(D) Sucrose
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5. Which ion is expected to form colored species?

- (A) Ti^{4+}
(B) Cr^{3+}
(C) Zn^{2+}
(D) Cu^{+}
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6. The product of the following reaction possesses:

3-hexene $\xrightarrow{(i)O_3/Zn/H_2O} \xrightarrow{(ii)HCN}$ **Product**

- (A) Both geometric and optical isomerism
(B) Geometric isomerism
(C) Optical isomerism
(D) Structural Isomerism
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7. Ethers should not be evaporated to dryness as the peroxide formed is:

- (A) Poisonous
(B) Insoluble in water
(C) Explosive
(D) An air pollutant
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8. The $cis-[(NH_3)_2PtCl_2]$ is mostly used in:

- (A) Medicine
(B) Glass

- (C) Paint
 - (D) Paper
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9. A parallel plate capacitor has a capacitance of $80\ \mu F$. The area between the plates is filled by 4 identical dielectric slabs with different dielectric constants (3, 2, 5 and 6). What will be the new capacitance?

- (A) $5\ \mu F$
 - (B) $320\ \mu F$
 - (C) $1280\ \mu F$
 - (D) $20\ \mu F$
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