Chapter-12: Vectors in a Plane

238. Position vector of P is <u>a</u> and Q is <u>b</u>

$\overrightarrow{PQ}$ = what?

  ⓐ <u>a</u> – <u>b</u>   ⓑ <u>a</u> + <u>b</u>

  ⓒ <u>b</u> – <u>a</u>   ⓓ <u>ab</u>   **ⓒ**

239. AB intersects in C at m : n ratio, then—

  ⓐ $\underline{c} = \dfrac{n\underline{a} - m\underline{b}}{m + n}$ ⓑ $\underline{c} = \dfrac{n\underline{a} - m\underline{b}}{m - n}$

  ⓒ $\underline{c} = \dfrac{n\underline{a} + m\underline{b}}{m + n}$ ⓓ $\underline{c} = \dfrac{m\underline{a} - m\underline{b}}{m + n}$ **ⓒ**

240.
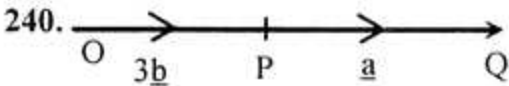
What is the value of $\overrightarrow{OQ}$ in this picture?

  ⓐ $3\underline{b} - \underline{a}$ ⓑ $\underline{a} - 3\underline{b}$

  ⓒ $-\underline{a} - 3\underline{b}$ ⓓ $3\underline{b} + \underline{a}$ **ⓓ**

241. The position vector of D, E and F according to vector main point is <u>a</u>, <u>b</u>, <u>c</u> DE interesects in F point at 7 : 3 ratio, externally. <u>c</u> = what?

  ⓐ $\dfrac{7\underline{b} - 3\underline{a}}{4}$ ⓑ $\dfrac{3\underline{a} - 7\underline{b}}{4}$

  ⓒ $\dfrac{7\underline{b} + 3\underline{a}}{10}$ ⓓ $\dfrac{7\underline{a} - 3\underline{b}}{4}$ **ⓐ**

242. Which one is scalar quantity?

  ⓐ Weight   ⓑ Force

  ⓒ Speed   ⓓ Force   **ⓒ**

243. If vector quantity is multiplied by scalar quantity, the product will be—

  ⓐ zero vector   ⓑ null vector

  ⓒ vector   ⓓ scalar   **ⓓ**

244. Which one is vector quantity?

  ⓐ speed   ⓑ volume

  ⓒ temperature   ⓓ force   **ⓒ**

245. What type of vector is $\overrightarrow{AA}$?

  ⓐ point vector   ⓑ unit vector

  ⓒ independent vector

  ⓓ limited vector   **ⓐ**

246. Which vector is parallel to <u>a</u> – 5<u>b</u>?

  ⓐ <u>a</u> + 5<u>b</u>   ⓑ 5<u>a</u> – <u>b</u>

  ⓒ <u>b</u> – 5<u>a</u>   ⓓ 2<u>a</u> – 10<u>b</u>   **ⓓ**

247. The position vector of A is <u>a</u> and B is <u>b</u> , according to O main point. P intersects AB at 2 : 1 ratio. Which one will represent $\overrightarrow{OC}$?

  ⓐ <u>a</u> – 2<u>b</u>   ⓑ 2<u>a</u> – <u>b</u>

  ⓒ $\dfrac{2\underline{a} + \underline{b}}{3}$ ⓓ $\dfrac{\underline{a} + 2\underline{b}}{3}$ **ⓓ**

248. The position vector of P and Q is respectively 9<u>a</u> – 4<u>b</u> and – 3<u>a</u> – <u>b</u>.

Then $\overrightarrow{PQ}$ is—

  ⓐ 6<u>a</u> – 5<u>b</u>

  ⓑ 12<u>a</u> – 3<u>b</u>

  ⓒ –12<u>a</u> + 3<u>b</u>

  ⓓ 12<u>a</u> – 3<u>b</u>   **ⓒ**

249. If two non-zero vector is equal, then which one is correct?

  ⓐ Vectors are non-parallel

  ⓑ Vectors are parallel

  ⓒ Vectors are zero

  ⓓ Vectors are perpendicular   **ⓑ**

250. <u>v</u> will be the opposite vector of <u>u</u>, if—

  i. $|\underline{v}| = |\underline{u}|$

  ii. containing line of <u>u</u> and <u>v</u> are paralallel

  iii. <u>u</u> and <u>v</u> are in opposite direction

Which one is correct?

  ⓐ i & ii   ⓑ ii & iii

  ⓒ i & iii   ⓓ i, ii & iii   **ⓓ**

251.
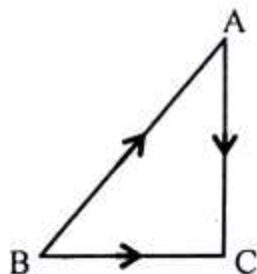
For △ABC—

i. $\vec{BC} - \vec{BA} = \vec{AC}$.

ii. $\vec{BA} + \vec{AC} = \vec{BC}$.

iii. $\vec{BC} + \vec{AC} = \vec{AB}$.

Which one is correct?

ⓐ i & ii   ⓑ i & iii

ⓒ ii & iii   ⓓ i, ii & iii   ⓐ

252. For zero vector—

i. we can determine direction

ii. absolute value is zero

iii. has no containing line

Which one is correct?

ⓐ i   ⓑ ii

ⓒ ii & iii   ⓓ i, ii & iii   ⓒ

253. For $\underline{u}, \underline{v}, \underline{w}$ $(\underline{u} + \underline{v}) + \underline{w} = \underline{u} + (\underline{u} + \underline{w})$ is—

i. law of addition

ii. law of subtraction

iii. associate law of addition

Which one is correct?

ⓐ i   ⓑ ii & iii

ⓒ i & iii   ⓓ i, ii & iii   ⓐ

The position vector of A, B is $\underline{a}$ and $\underline{b}$ respectively, according to vector main point O. AB is intersected in C at 3 : 2 ratio.

Read the stimuli and answer (254 − 255)

254. What is the position vector of C?

ⓐ $3\underline{b} - 2\underline{a}$ ⓑ $2\underline{a} - 3\underline{b}$

ⓒ $3\underline{b} + 2\underline{a}$ ⓓ $5\underline{a}$ ⓐ

255. $\vec{AC}$ = what?

ⓐ $3(\underline{b} - \underline{a})$

ⓑ $3(\underline{a} - \underline{b})$

ⓒ $3\underline{b} - \underline{a}$
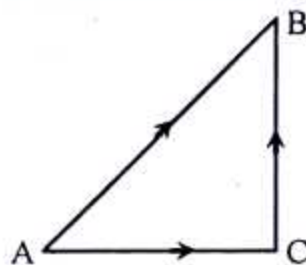
ⓓ $\underline{a} - 3\underline{b}$ ⓐ

Read the stimulus and answer question no. 256 − 258:

The position vector of A, B, C is $\underline{a}$, $\underline{b}$, $\underline{c}$ respectively.

256. $\vec{AB}$ = what?

ⓐ $\frac{1}{2}(\underline{a} - \underline{b})$

ⓑ $\frac{1}{2}(\underline{a} + \underline{b})$

ⓒ $\underline{a} - \underline{b}$

ⓓ $\underline{b} - \underline{a}$ ⓓ

257. If $\vec{AB}$, $\vec{AC}$, $\vec{CB}$ is non-zero vetor. Which one is correct?

ⓐ $\vec{AB} - \vec{BC} = \vec{AC}$

ⓑ $\vec{AC} - \vec{CB} = \vec{AB}$

ⓒ $\vec{AB} - \vec{AC} = \vec{CB}$

ⓓ $\vec{AB} + \vec{CB} = \vec{AC}$ ⓒ

258. If C is the middle point of AB. $\underline{c}$ = what?

ⓐ $\frac{1}{2}(\underline{b} - \underline{a})$ ⓑ $-\frac{1}{2}(\underline{b} - \underline{a})$

ⓒ $\frac{1}{2}(\underline{a} - \underline{b})$ ⓓ $\frac{1}{2}(\underline{a} + \underline{b})$ ⓓ