Lab Physics 1st Quarter Benchmark Assessment

ANSWER KEY

Multiple Choice

Item number	Correct Response	NJCCCS
1	D	5.1.12.A.2
2	B	5.2.12.E.1
3	B	5.2.12.A.1
4	C	5.2.12.E.2
5	D	5.2.12.E.1
6	B	5.2.12.E.2
7	A	5.2.12.E.4
8	D	5.2.12.E.3
9	A	5.2.12.B.3
10	C	5.2.12.E.2
11	A	5.2.12.E.3
12	D	5.1.12.E.3
13	B	5.1.12.E.3
14	C	5.1.12.E.4

Open-Ended Question I **5.2.12.E.4**

Motion diagrams:

Object I:

Object II:

a) The two dot patterns above are the motion diagrams of Object I and of Object II. Describe these two motion diagrams Which object has a faster speed? Why?

Both objects move at constant speed: dots are equally spaced.
Object 1 moves faster - dots are further apart, more distance traveled per unit time.

b) If a dot is recorded every 5 seconds, for how many seconds was motion recorded?

Assume 1st dot at t=5 seconds: 50 seconds [accept 45 if first dot at t=0]

The motion of Object III is recorded below.

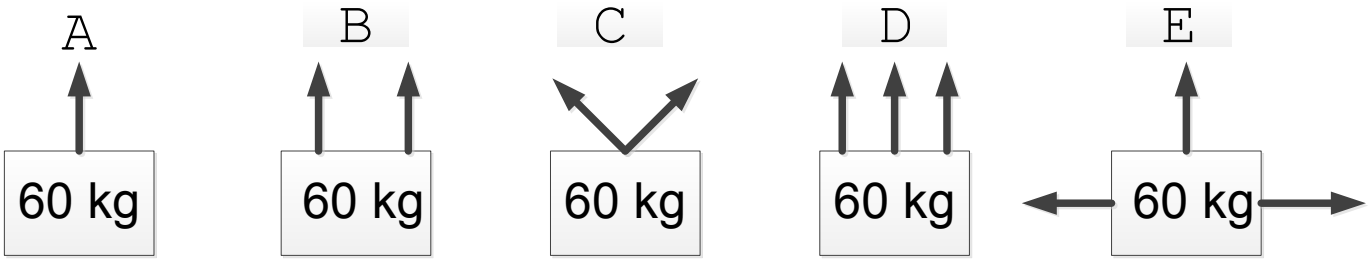
Object III

c)Describe the motion of Object III is position was recorded every 5 seconds.
Object slowing down - dots are progressively closer together

Open-ended question 2: **5.2.12.E.3**

Text

In the sketches A, B, C, D and E below, a 60 kg crate is in equilibrium. The crate is shown hanging from one, two or three ropes.



a) List these arrangements in order from sketch that has **minimum tension** in a support rope to the sketch that has the **maximum tension** in a support rope. If the tension in the ropes in two of the sketches are identical, indicate this. [1 point]

minimum tension — maximum tension

D - C - B - A/E [same]

b) Draw a free body diagram of sketch D and apply Newton's 1st law to solve for the tension in each rope. [2 points]