

**G.C. FOSTER COLLEGE OF PHYSICAL EDUCATION AND SPORT
ASSOCIATE DEGREE IN COACHING
JANUARY 2021 EXAMINATION**

**MATHEMATICS
[CO113ASC]**

YEAR 1

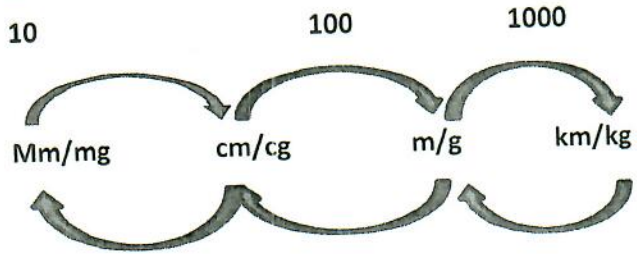
DURATION: 2 ½ HOURS

INSTRUCTIONS: Attempt ALL questions showing ALL workings

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO

Formula Sheet

Metric Conversion



Average Speed = distance / time

$$1 \text{ km/h} = 5/8 \text{ mile per hour}$$

$$1 \text{ km/h} = 5/18 \text{ m/s}$$

$$1 \text{ hour} = 3600 \text{ seconds}$$

1. Convert the following to the unit specified in brackets

- a. 74.25 cm (km)
- b. .0026 m (cm)
- c. 18.9 km/h (m/s)
- d. 91.8 m.p.h. (km/h)
- e. 11.5 lbs. (kg)
- f. 164.05 g (lbs.)
- g. 185.5 cm (ft)
- h. 35 ft (inches)

[1 mark each]

2. James weighs 215 lbs. and is 6 feet 8.5 inches tall, he is training for a boxing competition, where he needs to lose 30.5kg.

- a. What should James weigh in pounds so that he qualifies for the competition? [3 marks]
- b. What was James original weight in kg [2 marks]
- c. What is James height in:
 - i. Centimetre [1 mark]
 - ii. Metre [1 mark]

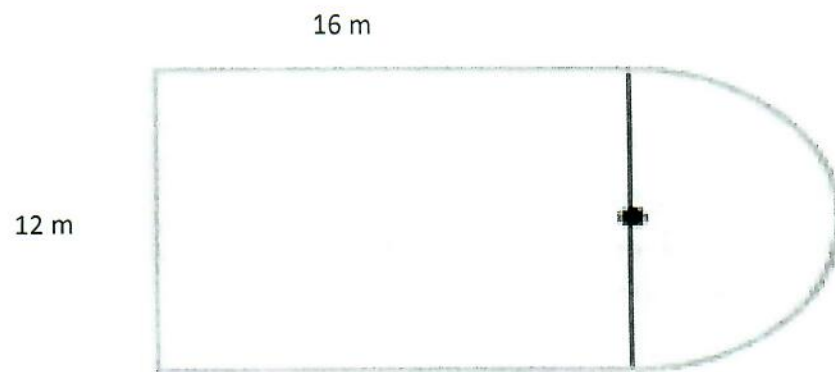
3. A woman leaves home at 6:10 am to travel to Browns Town which is 450 km away. For the first 150 km, she travels at an average speed of 75km/h.

- a. Calculate the time she takes to travel the first 150 km [2 marks]
- She then takes 3 hours to complete the final 300 km
- b. What was her average speed for the entire journey? [4 marks]
 - c. Determine what time she arrives at Browns Town [1 mark]

4. The figure below represents a rectangular room in an apartment with dimensions 16 m by 12 m and has a semicircular sitting area attached with a radius of 6 m.

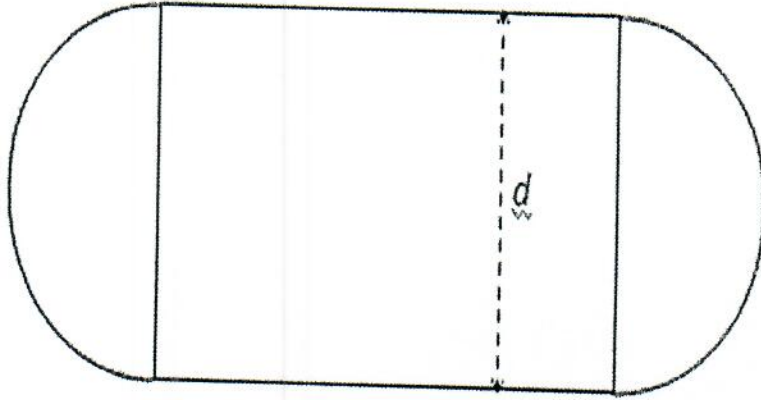
Determine:

- a. The area of the rectangular part of the room [2 marks]
- b. The perimeter of the room [3 marks]
- c. The area of the room [3 marks]



5. The shape below represents a track with circular ends of diameter 15m. If an athlete were to run a complete lap around the track., determine:
- a. The distance of the lap
 - b. The area of the track?

115 m



6. A coach bought 48 basketball for his team to use at home during their personal training for a sum of \$32,000. He then sold them to each athlete at a cost of \$1500 per ball , what was his:

- i. Profit
- ii. Profit percentage

If he had sold the balls for \$500 per ball what would be his:

- i. Loss
- ii. Loss percentage

[2 + 1 + 1+ 1 marks]

END OF EXAMINATION

