

SEPTEMBER 2023  
EBS 143  
GEOMETRY AND TRIGONOMETRY  
40 MINUTES

Candidate's Index Number
Signature:

UNIVERSITY OF CAPE COAST  
COLLEGE OF EDUCATION STUDIES  
SCHOOL OF EDUCATIONAL DEVELOPMENT AND OUTREACH  
INSTITUTE OF EDUCATION

COLLEGES OF EDUCATION  
FOUR-YEAR BACHELOR OF EDUCATION (B.ED)  
FIRST YEAR, SECOND SEMESTER MID-SEMESTER QUIZ, SEPTEMBER 2023

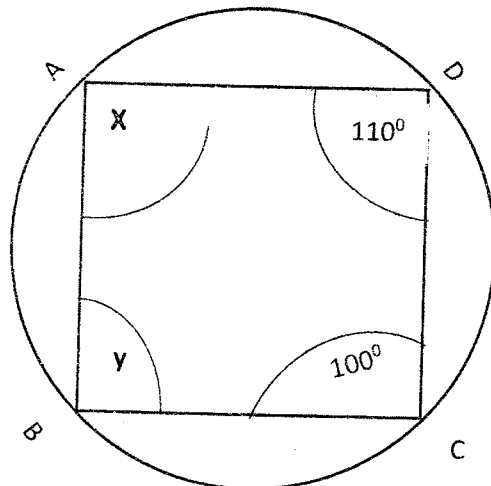
25<sup>TH</sup> SEPTEMBER 2023      GEOMETRY AND TRIGONOMETRY      10:30 AM – 11:10 AM

Answer ALL the questions.  
[20 MARKS]

For items 1 to 19, each stem is followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

1. In the diagram below find the angle marked  $y$  using the congruencies of angles in a quadrilateral.

- A.  $70^\circ$
- B.  $80^\circ$
- C.  $100^\circ$
- D.  $110^\circ$



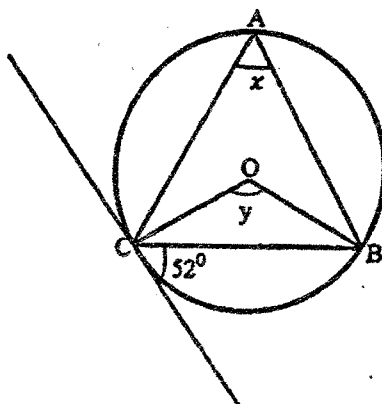
2. The sum of interior angles of a polygon is  $3420^\circ$ . How many sides does the polygon have?
- A. 18
  - B. 19
  - C. 20
  - D. 21

3. The angles,  $m$  and  $60^\circ$  are supplementary, what is the value of  $m$ ?
- A.  $60^\circ$
  - B.  $120^\circ$
  - C.  $150^\circ$
  - D.  $180^\circ$
4. Which of the following is the longest chord in a circle?
- A. Arc
  - B. Diameter
  - C. Radius
  - D. Sector
5. A quadrilateral drawn inside a circle with the vertices at the circumference of the circle is called ..... quadrilateral.
- A. circle
  - B. circumscribe
  - C. cyclic
  - D. inscribe
6. Which of the following process is **true** about constructing an angle at a point on a straight line? Constructing ..... at the other side of the same point.
- A.  $135^\circ$  at one side of a point on the line is the same as  $35^\circ$
  - B.  $135^\circ$  at one side of a point on the line is the same as  $45^\circ$
  - C.  $150^\circ$  at one side of a point on the line is the same as  $60^\circ$
  - D.  $90^\circ$  at one side of a point on the line is the same as  $110^\circ$
7. Two interior angles of an octagon are such that one is 42 degrees more than the other, the remaining angles are  $150^\circ$  each. Find the measure of the bigger of two remaining interior angles of this polygon.
- A.  $42^\circ$
  - B.  $69^\circ$
  - C.  $111^\circ$
  - D.  $192^\circ$
8. Which one of the following sets of points represents the sides of a triangle?
- I. 3, 4, and 5
  - II. 6, 8, and 10
  - III. 3, 4, and 9
- A. I only
  - B. I and II only
  - C. II only
  - D. III only
9. The exterior angle of a polygon is  $36^\circ$ . What is the size of each interior angle?
- A.  $40^\circ$
  - B.  $120^\circ$
  - C.  $144^\circ$
  - D.  $180^\circ$

10. Two interior angles of an octagon is such that one is  $42^\circ$  more than the other. The remaining angles are  $150^\circ$  each. Find the smallest of the interior angles of the polygon.
- $11^\circ$
  - $42^\circ$
  - $69^\circ$
  - $192^\circ$

11. In the diagram below,  $O$  is the center of the circle and the angle between the tangent and the chord  $CB$  is  $52^\circ$ . Calculate the value of  $x + y$ .

- $52^\circ$
- $52^\circ$
- $76^\circ$
- $156^\circ$



12. The volume of a cube is  $729\text{cm}^3$ . Find the total surface area.
- $9\text{cm}$
  - $81\text{cm}$
  - $243\text{cm}$
  - $486\text{cm}$
13. A solid figure with uniform cross sectional-area is called .....
- cone.
  - prism.
  - pyramid.
  - sphere.
14. To draw the perpendicular bisector of line segment  $AB$ , we open the compass .....
- equal to  $\frac{1}{2} AB$
  - full length of  $AB$
  - less than  $\frac{1}{2} AB$
  - more than  $\frac{1}{2} AB$
15. Which of the following is **not** needed to inscribe a triangle in a circle?
- Construction of a polygon the minimum number of sides.
  - Locus of points equidistance from a fixed point.
  - Locus of points equidistance from two fixed points.
  - Locus of points equidistance from two intersecting straight lines.
16. A polygon with 7 non-overlapping triangles is called .....
- decagon.
  - hexagon.
  - nonagon.
  - octagon.

17. Which of the following are **true**?

- I. The opposite interior angles of a cyclic quadrilateral are supplementary.
- II. The radius and a tangent of a circle join orthogonally.
- III. Equal chords subtend the congruent angles at the circumference of a circle.

- A. I and II only
- B. I, II and III
- C. I and III only
- D. III and II only

18. The bisectors of angles of a parallelogram form a .....

- A. kite.
- B. rectangle.
- C. rhombus.
- D. square.

19. The length of a chord of circle of radius 10 cm is 12 cm. Determine the distance of the chord from the centre.

- A. 5cm
- B. 6cm
- C. 7cm
- D. 8cm

**Item 20 is a statement followed by True and False options. Read the statement carefully and indicate whether it is True or False by circling the letter of the correct option.**

20. The area bounded by two radii in a circle is called the segment.

- A. True
- B. False