Similar Figures- Unit No. 9 Test # 1

Time: 30 Minutes Total Marks: 20

Part A: Multiple Choice Questions (1×5 = 5 marks)

1. The ratio of the areas of two similar polygons is:

- (a) equal to the ratio of their perimeters
- (b) equal to the square of the ratio of their corresponding sides
- (c) equal to the cube of the ratio of their corresponding sides
- (d) equal to the sum of their corresponding sides

2. The total number of diagonals in a polygon with 9 sides is:

- (a) 18
- (b) 21
- (c) 25
- (d) 27

3. If two polygons are similar, then:

- (a) their corresponding angles are equal
- (b) their areas are equal
- (c) their volumes are equal
- (d) their corresponding sides are equal

4. A regular polygon has an interior angle of 165°. How many sides does it have?

- (a) 15
- (b) 16
- (c) 20
- (d) 24

5. The exterior angle of a regular pentagon is:

- (a) 40°
- (b) 45°
- (c) 60°
- (d) 72°

Part B: Short Questions (2×5 = 10 marks)

1. Define tessellation with example. (Definition)

2. Two spheres have radii in ratio 3:4. Find the ratio of their volumes.

3. Two tetrahedrons have volume ratio 8:27. Find ratio of their sides.

4. Find the area of a parallelogram with base 10 cm and height $6/\sqrt{2}$ cm.

5. A model car has linear dimensions 1/10 of the original. Find area and volume ratios.

Part C: Long Question (5 marks)

1. Three similar jugs have heights 8 cm, 12 cm, and 16 cm. If the smallest holds 1/2 litre, find capacities of the others.

Similar Figures- Unit No. 9 Test # 2

Time: 30 Minutes Total Marks: 20

Part A: Multiple Choice Questions (1×5 = 5 marks)

1. In a regular hexagon, the ratio of the length of a diagonal to the side length is:

- (a) 3:1
- (b) 2:1
- (c) 3:2
- (d) 2:3

2. A regular polygon has an interior angle of 165°. How many sides does it have?

- (a) 15
- (b) 16
- (c) 20
- (d) 24

3. The ratio of the areas of two similar polygons is:

- (a) equal to the ratio of their perimeters
- (b) equal to the square of the ratio of their corresponding sides
- (c) equal to the cube of the ratio of their corresponding sides
- (d) equal to the sum of their corresponding sides

4. A parallelogram has an area of 64 cm^2 and a similar one has an area of 144 cm^2. If a side of the smaller is 8 cm, the corresponding side of the larger is:

- (a) 10 cm
- (b) 12 cm
- (c) 18 cm
- (d) 16 cm

5. The exterior angle of a regular pentagon is:

- (a) 40°
- (b) 45°
- (c) 60°
- (d) 72°

Part B: Short Questions (2×5 = 10 marks)

1. Define similar figures. (Definition)

2. A model car has linear dimensions 1/10 of the original. Find area and volume ratios.

3. Find the area of a parallelogram with base 10 cm and height $6/\sqrt{2}$ cm.

4. If the volume of two similar cones is 64:125, find the ratio of their heights and base areas.

5. Find the sum of interior angles of a decagon.

Part C: Long Question (5 marks)

1. A tessellation is made using 1 regular hexagon, 6 squares, and 6 equilateral triangles with side length 0.5 m. Find total area of the pattern.

Similar Figures- Unit No. 9 Test # 3

Time: 30 Minutes Total Marks: 20

Part A: Multiple Choice Questions (1×5 = 5 marks)

1. In a regular hexagon, the ratio of the length of a diagonal to the side length is:

- (a) 3:1
- (b) 2:1
- (c) 3:2
- (d) 2:3

2. If two polygons are similar, then:

- (a) their corresponding angles are equal
- (b) their areas are equal
- (c) their volumes are equal
- (d) their corresponding sides are equal

3. A regular polygon has an interior angle of 165°. How many sides does it have?

- (a) 15
- (b) 16
- (c) 20
- (d) 24

4. The total number of diagonals in a polygon with 9 sides is:

- (a) 18
- (b) 21
- (c) 25
- (d) 27

5. The ratio of the areas of two similar polygons is:

- (a) equal to the ratio of their perimeters
- (b) equal to the square of the ratio of their corresponding sides
- (c) equal to the cube of the ratio of their corresponding sides
- (d) equal to the sum of their corresponding sides

Part B: Short Questions (2×5 = 10 marks)

1. What is the rule of volumes for similar solids? (Definition)

2. Two spheres have radii in ratio 3:4. Find the ratio of their volumes.

3. Find the area of a trapezoidal window with parallel sides 3m and 1.5m, height 2m.

4. Find the sum of interior angles of a decagon.

5. Find each exterior angle of a regular pentagon.

Part C: Long Question (5 marks)

1. A rectangular wall 10 m tall and 120 m wide needs painting. One gallon covers 35 m^2. How many gallons needed?

Similar Figures- Unit No. 9 Test # 4

Time: 30 Minutes Total Marks: 20

Part A: Multiple Choice Questions (1×5 = 5 marks)

1. The total number of diagonals in a polygon with 9 sides is:

- (a) 18
- (b) 21
- (c) 25
- (d) 27

2. In a regular hexagon, the ratio of the length of a diagonal to the side length is:

- (a) 3:1
- (b) 2:1
- (c) 3:2
- (d) 2:3

3. The ratio of the areas of two similar polygons is:

- (a) equal to the ratio of their perimeters
- (b) equal to the square of the ratio of their corresponding sides
- (c) equal to the cube of the ratio of their corresponding sides
- (d) equal to the sum of their corresponding sides

4. The exterior angle of a regular pentagon is:

- (a) 40°
- (b) 45°
- (c) 60°
- (d) 72°

5. If two polygons are similar, then:

- (a) their corresponding angles are equal
- (b) their areas are equal
- (c) their volumes are equal
- (d) their corresponding sides are equal

Part B: Short Questions (2×5 = 10 marks)

1. What is the condition for similarity of polygons? (Definition)

2. Find each exterior angle of a regular pentagon.

3. Find area of a regular hexagon with side length 5 cm.

4. Two spheres have radii in ratio 3:4. Find the ratio of their volumes.

5. A right-angled triangle with base 3 and height 4 tiles a 3600 sq unit floor. How many are needed?

Part C: Long Question (5 marks)

1. Three similar glasses have heights 7.5, 9, and 10.5 cm. If the tallest holds 343 ml, find capacities of others.

Similar Figures- Unit No. 9 Test # 5

Time: 30 Minutes Total Marks: 20

Part A: Multiple Choice Questions (1×5 = 5 marks)

1. A parallelogram has an area of 64 cm² and a similar one has an area of 144 cm². If a side of the smaller is 8 cm, the corresponding side of the larger is:

- (a) 10 cm
- (b) 12 cm
- (c) 18 cm
- (d) 16 cm

2. In a regular hexagon, the ratio of the length of a diagonal to the side length is:

- (a) 3:1
- (b) 2:1
- (c) 3:2
- (d) 2:3

3. If two polygons are similar, then:

- (a) their corresponding angles are equal
- (b) their areas are equal
- (c) their volumes are equal
- (d) their corresponding sides are equal

4. The exterior angle of a regular pentagon is:

- (a) 40°
- (b) 45°
- (c) 60°
- (d) 72°

5. The total number of diagonals in a polygon with 9 sides is:

- (a) 18
- (b) 21
- (c) 25
- (d) 27

Part B: Short Questions (2×5 = 10 marks)

1. State the relationship between surface areas and side lengths in similar solids. (Definition)

2. Find area of a regular hexagon with side length 5 cm.

3. Two tetrahedrons have volume ratio 8:27. Find ratio of their sides.

4. If the volume of two similar cones is 64:125, find the ratio of their heights and base areas.

5. Find the number of square tiles (1m x 1m) required to cover a floor of size 12m x 15m.

Part C: Long Question (5 marks)

1. A model car has door area 1 cm^2 and real car has 2500 cm^2. Find length, capacity, and window area ratios.