

Mathematics, 2018 EC, Grade 6 model exam

Grade 6 · Mathematics · 2018 E.C.

MARKING KEY — CONFIDENTIAL

Time allowed: 120 minutes

Questions: 28

Total marks: 28

1. ርዝመቱ 5.5 ሳ.ሜ የሆነ ካሬ ስፋቱ ስንት ይሆናል ? (1)

A. 11 ሳ.ሜ²B. 40.5 ሳ.ሜ²C. ✓ 30.25 ሳ.ሜ²D. 50 ሳ.ሜ²**Answer: C**The area of a square is calculated by squaring its side length: $5.5 \text{ cm} \times 5.5 \text{ cm} = 30.25 \text{ cm}^2$.2. 1 ሳ.ሜ² ስንት ሚ.ሜ² ነው ? (1)A. 10 ሚ.ሜ²B. ✓ 100 ሚ.ሜ²C. 10,000 ሚ.ሜ²D. 100,000 ሚ.ሜ²**Answer: B**Since $1 \text{ cm} = 10 \text{ mm}$, the area conversion is $1 \text{ cm}^2 = (10 \text{ mm})^2 = 100 \text{ mm}^2$.

3. የጎን ርዝመቱ 5 ሳ.ሜ ፣ ወርዱ 4 ሳ.ሜ እንዲሁም ቁመቱ 3 ሳ.ሜ የሆነ ሳጥን ይዘቱ ስንት ይሆናል ? (1)

A. 40 ሳ.ሜ³B. 50 ሳ.ሜ³C. ✓ 60 ሳ.ሜ³D. 70 ሳ.ሜ³**Answer: C**The volume of a rectangular box is the product of its length, width, and height: $5 \text{ cm} \times 4 \text{ cm} \times 3 \text{ cm} = 60 \text{ cm}^3$.4. 5ሜ³ ወደ ሳ.ሜ³ ሲቀየር ስንት ይሆናል ? (1)A. 500 ሳ.ሜ³B. 5,000 ሳ.ሜ³C. 500,000 ሳ.ሜ³D. ✓ 5,000,000 ሳ.ሜ³**Answer: D**Since $1 \text{ m} = 100 \text{ cm}$, the volume conversion is $1 \text{ m}^3 = 100^3 \text{ cm}^3 = 1,000,000 \text{ cm}^3$. Thus, $5 \text{ m}^3 = 5,000,000 \text{ cm}^3$.

5. በአራዳ ክ/ከተማ የሴቶች እና ህፃናት መስሪያ ቤት ውስጥ በተዘጋጀ ስልጠና በስብሰባው ላይ ለተገኙ ሴቶች በምሳ ሰዓት በቀረበው የለስላሳ መጠጥ ሳጥን ሲደረገር ርዝመቱ 5 ሳጥን ፣ ወርዱ 4 ሳጥን እና ከፍታው 3 ሳጥን ቢሆን ፤ በአጠቃላይ በስብሰባው ላይ ተሰባሳቢዎቹ ለምሳ የተጠቀሙት የለስላሳ ሳጥን ብዛት ስንት ይሆናል ? (1)

A. ✓ 60 ሳጥን

B. 50 ሳጥን

C. 40 ሳጥን

D. 70 ሳጥን

Answer: AThe total number of boxes is calculated by multiplying the dimensions of the arrangement: $5 \times 4 \times 3 = 60$ boxes.

6. ከሚከተሉት ውስጥ አንዱ ህገ-ወጥ ክፍልፋይ አይደለም :: (1)

A. 8/8

B. 26

C. 46/45

D. ✓ 12/13

Answer: DAn improper fraction (ህገ-ወጥ ክፍልፋይ) is a fraction where the numerator is greater than or equal to the denominator. Since the numerator of $\frac{12}{13}$ is less than its denominator, it is a proper fraction (not improper).

7. 4 አንድች 3 አንድ አስረኛዎች እና 2 አንድ መቶኛዎች የሚለውን አገላለፅ የሚወክለው ቁጥር የት ነው ? (1)

- A. ✓ **4.32** B. 23.4
C. 432 D. 234

Answer: A

The expression '4 ones, 3 tenths, and 2 hundredths' is written as $4 \times 1 + 3 \times 0.1 + 2 \times 0.01 = 4.32$.

8. $2.3 - 1.15 =$ ----- (1)

- A. 1.25 B. ✓ **1.15**
C. 1.51 D. 1.52

Answer: B

Subtracting 1.15 from 2.30 gives 1.15 ($2.30 - 1.15 = 1.15$).

9. $21.5 \div 2.5 =$ ----- (1)

- A. 7.6 B. ✓ **8.6**
C. 9.6 D. 10.6

Answer: B

Dividing 21.5 by 2.5 is equivalent to dividing 215 by 25, which yields 8.6.

10. $24/120$ ወደ አስርዮሽ ሲለወጥ ስንት ይሆናል ? (1)

- A. ✓ **0.2** B. 0.3
C. 0.4 D. 0.5

Answer: A

To convert $\frac{24}{120}$ to a decimal, simplify the fraction first: $\frac{24}{120} = \frac{2}{10} = 0.2$.

11. $130/400$ ስንት መቶኛ ነው ? (1)

- A. 30.5% B. 31.5%
C. ✓ **32.5%** D. 33.5%

Answer: C

To find the percentage, calculate $\frac{130}{400} \times 100\% = 32.5\%$.

12. 1,400 ብር የሚሸጥ ቲሽርት 15% ተጨማሪ እሴት ታክስ(VAT) ሲጨመር ስንት ይሆናል ? (1)

- A. 1,410 ብር B. 1,510 ብር
C. ✓ **1,610 ብር** D. 1,710 ብር

Answer: C

A 15% VAT on 1,400 Birr is $1,400 \times 0.15 = 210$ Birr, making the total price $1,400 + 210 = 1,610$ Birr.

13. $\frac{81}{45}$ በዝቅተኛ ሂሳባዊ ቃል ሲገለፅ ስንት ይሆናል ? (1)

- A. $\frac{5}{9}$ B. $\frac{9}{4}$
C. $\frac{4}{9}$ D. ✓ **$\frac{9}{5}$**

Answer: D

The greatest common divisor of 81 and 45 is 9. Dividing both the numerator and denominator by 9 gives the simplified fraction $\frac{9}{5}$.

14. 0.215 ወደ ክፍልፋይ ሲቀየር የትኛውን ይወክላል ? (1)

- A. $\frac{215}{100}$ B. $\frac{125}{1000}$
C. ✓ $\frac{215}{1000}$ D. $\frac{125}{100}$

Answer: C

The decimal 0.215 has three decimal places, which represents the fraction $\frac{215}{1000}$.

15. ከትልቅ ወደ ትንሽ በቅደም ተከተል የተቀመጠውን ምረጡ :: (1)

- A. $\frac{1}{6}$ $\frac{3}{7}$ $\frac{1}{7}$ $\frac{3}{5}$ B. ✓ $\frac{3}{5}$ $\frac{3}{7}$ $\frac{1}{6}$ $\frac{1}{7}$
C. $\frac{3}{7}$ $\frac{3}{5}$ $\frac{1}{6}$ $\frac{1}{7}$ D. $\frac{1}{6}$ $\frac{3}{5}$ $\frac{1}{7}$ $\frac{3}{7}$

Answer: B

Converting the fractions to decimals gives $\frac{3}{5} = 0.6$, $\frac{3}{7} \approx 0.428$, $\frac{1}{6} \approx 0.167$, and $\frac{1}{7} \approx 0.143$, which are correctly ordered from largest to smallest in option B.

16. ከሚከተሉት ቁጥሮች ውስጥ በ2 ፣ 3 ፣ 4 ፣ 5 ፣ 6 እና በ7 ተካፋይ የሆነው የትኛው ነው ? (1)

- A. ✓ 420 B. 3,234
C. 2,303 D. 2,340

Answer: A

The least common multiple (LCM) of 2, 3, 4, 5, 6, and 7 is 420. Since 420 is in the options, it is the only number divisible by all of them.

17. የ10 ፣ 20 እና 30 የጋራ አካፋዮች የትኞቹ ናቸው ? (1)

- A. ✓ 1 ፣ 2 ፣ 5 ፣ 10 B. 1 ፣ 2 ፣ 4 ፣ 5 ፣ 10
C. 1 ፣ 10 ፣ 20 ፣ 30 D. 10 ፣ 20 ፣ 30

Answer: A

The factors of 10 are {1, 2, 5, 10}, all of which also divide 20 and 30, making them the set of common factors.

18. የ $1\frac{2}{5}$ እና $\frac{3}{4}$ ድምር ስንት ነው ? (1)

- A. $\frac{34}{20}$ B. ✓ $\frac{43}{20}$
C. $\frac{20}{34}$ D. $\frac{20}{43}$

Answer: B

Convert the mixed number to an improper fraction: $1\frac{2}{5} = \frac{7}{5}$. Their sum is $\frac{7}{5} + \frac{3}{4} = \frac{28+15}{20} = \frac{43}{20}$.

19. የ205 እና ሌላ ሙሉ ቁጥር ት.ጋ.አ 5 ነው ፤ የሁለቱ ቁጥሮች ት.ጋ.ብ 12,300 ቢሆን ሁለተኛ ሙሉ ቁጥር ስንት ይሆናል ? (1)

- A. 400 B. ✓ 300
C. 250 D. 505

Answer: B

Using the relation $\text{GCD}(a, b) \times \text{LCM}(a, b) = a \times b$, we have $5 \times 12,300 = 205 \times x$, which simplifies to $x = 300$.

20. ትንሹ ተተንታኝ ኢ-ተጋማሽ ቁጥር ስንት ነው ? (1)

- A. 1 B. 3
C. 5 D. ✓ 9

Answer: D

An odd composite number (ተተንታኝ ኢ-ተጋማሽ ቁጥር) is an odd number that has more than two factors. The smallest such number is 9, as its factors are 1, 3, and 9.

21. ከ 1% ጋር እኩል ያልሆነው የትኛው ነው ?

(1)

- A. 0.01
B. 3/300
C. ✓ 2/300
D. 1/100

Answer: C

$1\% = 0.01 = \frac{1}{100}$. Since $\frac{2}{300} = \frac{1}{150} \approx 0.0067$, it is not equal to 1% .

22. አንድ ሙሉ ቁጥር ኢ - ተጋማሽ የሚሆነው የቁጥሩ የአንድ ቤት ሆሄ ስንት ሲሆን ነው ?

(1)

- A. $\checkmark$ 1 3 5 7 9
- B. 0 2 3 6 8
- C. 0 2 4 6 8
- D. 2 5 10

Answer: A

An integer is odd (አ-ተጋማሽ) if and only if its ones digit (የአንድ ቤት ሆኔ) is an odd digit, which can be 1, 3, 5, 7, or 9.

23. አንድ ነጋዴ በ50,000 ብር የገዛውን ቴሌቪዥን በ5% አትርፎ ቢሸጥ ፤ ነጋዴው ያተረፈው ስንት ብር ነው?

(1)

- A. 3,000 ₺ B. ✓ 2,500 ₺
C. 2,400 ₺ D. 3,500 ₺

Answer: B

The profit made is 5% of 50,000 Birr, which is calculated as $50,000 \times 0.05 = 2,500$ Birr.

24. 7/20 ወደ መቶኛ ሲቀየር ስንት ይሆናል ?

(1)

- A. 45% B. 55%
- C. 25% D. ✓ 35

Answer: D

To convert $\frac{7}{20}$ to a percentage, multiply by 100%: $\frac{7}{20} \times 100\% = 7 \times 5\% = 35\%$.

25. ሆና ለቤተሰቦቿ 33/6 ኪ.ግ ሙዝ እና 5.6 ኪ.ግ ብርቱካን ገዛች፤ ሆና በአጠቃላይ ስንት ኪ.ግ ፍራፍሬ ገዛች?

(1)

- A. 15.15ኪ.ግ B. 11.5ኪ.ግ
C. ✓ 11.1 ኪ.ግ D. 9.4ኪ.ግ

Answer: C

Converting $33/6$ kg to decimals gives 5.5 kg. Adding this to 5.6 kg of oranges results in a total of 11.1 kg of fruits.

26. $30/4 - 0.9 = \text{-----}$

(1)

- A. 4.6
C. ✓ 6.6

Answer: C

First, convert the fraction $\frac{30}{4}$ to its decimal form, which is 7.5. Then, subtracting 0.9 from 7.5 gives 6.6.

27. የ $5/3$ እና 0.2 ብዜት ስንት ነው ?

(1)

- A. $\checkmark$ $1/3$ B. $1/2$
C. $1/4$ D. $1/5$

Answer: A

The product of $\frac{5}{3}$ and 0.2 is calculated by converting 0.2 to the fraction $\frac{1}{5}$, giving $(\frac{5}{3}) * (\frac{1}{5}) = \frac{1}{3}$.

28. $0.32 \div 5/4 = \text{-----}$

(1)

A. 0.325

B. ✓ **0.256**

C. 0.562

D. 0.725

Answer: B

Dividing 0.32 by $5/4$ is equivalent to multiplying 0.32 by the reciprocal $4/5$ (or 0.8), which yields $0.32 * 0.8 = 0.256$.

— END OF MARKING KEY —

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