

Time -1:15 hours

Practice test-2

Class –Seven

Total marks--(C.Q-20)+(M.C.Q-30)

Subject – Mathematics

[ Answer all the questions. Write the answer of MCQ on exam sheet]

**Creative questions**

1.  $a^2-5a-1=0$ ,  $p = x + \frac{1}{x}$ 
  - a. find the value of  $(a - \frac{1}{a})^2$ . 2
  - b. prove that,  $a^4-27a^2+1=0$ . 4
  - c. if  $p=3$ , then find the value of  $(x^2 + \frac{1}{x^2})^2$ . 4
2. Three equal size glasses are filled with sweet drink. In that sweet drink the ratio of water and syrup in the first glass is 3:1, in the second glass is 5:3 and in the third glass is 9:7.
  - a. express the ratio of first and third glasses as successive ratio. 2
  - b. determine the amount of water and syrup in first and third glasses. 4
  - c. if the sweet drink of three glasses are mixed together , then find the ratio of water and syrup in the mixture. 4

**Multiple choice questions**

1. If a, b and c are continued proportional, then –
    - a.  $b^2=ac$
    - b.  $a^2=bc$
    - c.  $c^2= ab$
    - d.  $c^3=ab$
- Answer questions number (2-4) based on the following information.  
sony, mony and jony have total Tk 96. The ratio of their money is 1:2:3.
2. How much Tk does sony have?
    - a. 15
    - b. 16
    - c. 20
    - d. 27
  3. How much Tk does mony have?
    - a. 27
    - b. 28
    - c. 30
    - d. 32
  4. How much Tk jony have more than mony?
    - a. 16
    - b. 20
    - c. 21
    - d. 24
  5. If  $a= -1$  and  $b= -2$ , then find the value of  $2(a^2+b^2)$ .
    - a. 10
    - b. 8
    - c. 7
    - d. -6
  6. If  $a+b=8$  and  $a-b=4$ , then – (i) the square of  $a-b$  is 16 (ii)  $(a+b)^2= 64$  (iii)  $2(a^2+b^2)= 80$   
Which of the following is correct?
    - a. i and ii
    - b. i and iii
    - c. ii and iii
    - d. i, ii and iii
  7. If  $a^2+b^2=9$  and  $ab=3$ , then - (i)  $(a-b)^2=3$  (ii)  $(a-b)^2= 15$  (iii)  $4ab= 12$   
Which of the following is correct?
    - a. i and ii
    - b. i and iii
    - c. ii and iii
    - d. i, ii and iii
  8. If  $A:B= 4:5$  and  $B:C= 7:9$ , what is the value of  $A:B:C$ ?
    - a. 28:35:59
    - b. 28:53:45
    - c. 4:5:9
    - d. 28:35:45
  9. which one is the fourth proportional of 3,6,7?
    - a. 14
    - b. 15
    - c. 20
    - d. 21
  10. In continued proportion, the multiplication of first and third quantities and the square of second quantity are-
    - a. equal
    - b. less than
    - c. greater than
    - d. cubic
  11. Which one is the ratio of 2 years 6 months and 1 year?
    - a. 10:4
    - b. 4:10
    - c. 26:1
    - d. 1:26
  12. Find the successive ratio of A:B and B:C.
    - a. A:B:B:C
    - b. A:B and B:C
    - c. B:A:C
    - d. A:B:C
  13. How many quantities form a proportion?
    - a. 1
    - b. 3
    - c. 4
    - d. 5
  14. Tk 1500 is divided in the ratio of 3:2. If the 1<sup>st</sup> quantity is Tk 900, how much Tk is the 2<sup>nd</sup> quantity?
    - a. 1000
    - b. 800
    - c. 600
    - d. 500

15.  $9:18::25:\square$  , then  $\square =$  what?

- a. 50    b. 75    c. 100    d. 125

16. If a transversal cuts two parallel straight lines, then how much degree is the sum of two interior angles on the same side of the transversal?

- a. 60    b. 90    c. 180    d. 360

17. If a transversal cuts two parallel straight lines, then how many angles are formed?

- a. 4    b. 5    c. 7    d. 8

18. If  $a+b=3$  and  $ab=2$  ,then  $a^2-ab+b^2=$  what?

- a. 3    b. 6    c. 9    d. 12

19. Which of the following is the required number of quantities in the continued proportion?

- a. 1    b. 3    c. 4    d. 5

20. Which of the following is the symbol of parallel?

- a. =    b.  $\cong$     c.  $\parallel$     d.  $\perp$

21. which of the following is the property of corresponding angles?

- a.  $80^0$     b. different angular point    c. are on opposite sides of the transversal    d. lie between two lines

22. which of the following is the property of interior angles?

- a.  $80^0$     b. same angular point    c. are on opposite sides of the transversal    d. lie outside the two lines

23. If in  $\triangle ABC$ ,  $\angle A + \angle B = 90^0$ , then  $\angle C=$  how much degree?

- a.  $90^0$     b.  $150^0$     c.  $180^0$     d.  $300^0$

24. what is mean by  $\cong$ ?

- a. equal    b. perpendicular    c. parallel    d. congruent

25. which of the following formula / corollary is correct?

a.  $a^2+b^2=(a+b)^2-2ab$

b.  $a^2+b^2=(a-b)^2-2ab$

c.  $2(a^2+b^2)=(a-b)^2-(a-b)^2$

d.  $a^2+b^2+c^2+2ab+2bc+2ca=(a-b-c)^2$

26. which of the following formula / corollary is correct?

a.  $a^2+b^2=(a+b)^2+2ab$

b.  $a^2+b^2=(a-b)^2+2ab$

c.  $2(a^2-b^2)=(a-b)^2+(a-b)^2$

d.  $a^2-b^2+c^2+2ab+2bc+2ca=(a+b+c)^2$

27. which of the following formula / corollary is correct?

a.  $(a+b)^2=(a-b)^2+2ab$

b.  $(a-b)^2=(a-b)^2-4ab$

c.  $4ab=(a+b)^2+(a-b)^2$

d.  $(x+a)(x+b)=x^2+(a+b)x+ab$

28. The sum of the square of two quantities= ?

a. sum of two quantities  $\div$  difference of two quantities

b. square of 1<sup>st</sup> quantity + 2  $\times$  1<sup>st</sup> quantity  $\times$  2<sup>nd</sup> quantity - square of 2<sup>nd</sup> quantity

c. (1<sup>st</sup> quantity + 2<sup>nd</sup> quantity)<sup>2</sup> - 2  $\times$  1<sup>st</sup> quantity  $\times$  2<sup>nd</sup> quantity

d. sum of two quantities  $\times$  difference of two quantities

29. which of the following is the square of  $-x-y$ ?

- a.  $x^2+2xy+y^2$     b.  $x^2-2xy+y^2$     c.  $-x^2+2xy-y^2$     d.  $-x^2-y^2$

30. If  $a+b+c=15$ ,  $a^2+b^2+c^2=83$ , then  $ab+bc+ca=$  ?

- a. 71    b. 72    c. 73    d. 80