



# Job Information For All Students (BCS & Bank)

Entry  
শুভাগমন

Learn  
আনন্ডন

Goal  
উদ্দেশ্য

Success  
সাকল্য

*We always with you...*

## AUST Written Questions

### InDEx

1. Sonali Bank (Assistant Engineer IT)-2016 (Math)
2. PKB SEO- 2018 (Math)
3. Basic Bank (Assistant Manager)-2018 (Math)
4. Karmasangsthan Bank DEO-2018 (Math)
5. Janata bank EO (civil)-2017 (Math)
6. Bangladesh Krishi Bank DEO-2018 (Math)
7. Sonali Bank Officer Cash -2018 (Full)
8. Combined 3 Bank Senior Officer -2018 (Full)
9. Combined 8 bank Senior Officer -2018 (Math)
10. Combined 2 Bank Officer -2018 (Math)
11. Combined 3 Bank Office Cash -2018 (Math)
12. Sonali Bank Officer FF Quota-2019 (Math)
13. Combined 5 Bank Officer Cash -2019 (Full)
14. Combined 8 Bank Senior Officer(Canceled) -2019 (Full)
15. Combined 8 Bank Senior Officer -2019 (Full)
16. Janata Bank Senior Officer - 2018 (Full)
17. Combined 4 Bank Officer - 2019 (Full)

সংগ্রহেঃ মোঃ রায়হান আহমেদ

[Job Information For All Students \(Bcs & Bank\)](#)



প্রতিদিনের চাকুরীর মার্কুলার পেতে [এখানে ক্লিক করুন](#)

প্রতি মাসের কারেন্ট অ্যাফেয়ার্স পিডিএফ [এখানে ক্লিক করুন](#)

চাকুরীর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিসিএম এর প্রয়োজনীয় পিডিএফ বই [এখানে ক্লিক করুন](#)

প্রতি সপ্তাহের চাকুরী পত্রিকা ডাউনলোড [এখানে ক্লিক করুন](#)

সকল নিয়োগ পরীক্ষার প্রশ্ন সমাধান [এখানে ক্লিক করুন](#)

**বিডিনিয়োগ.কম দেশের মেরা পিডিএফ কালেকশন**

SSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

HSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিশ্ববিদ্যালয় ভর্তির সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

সকল ধরনের **মাজেশন** ডাউনলোড [এখানে ক্লিক করুন](#)



### Sonali Bank (Assistant Engineer IT)-2016

1. A, B and C enter into partnership with investment in the ratio 5:7:8. If at the end of the year A's share of profit is 42360, how much is the total profit?

**Solution:**

Let,  
 A's investment is  $5x$  tk  
 B investment is  $7x$  tk  
 C investment is  $8x$  tk  
 Total investment =  $5x + 7x + 8x = 20x$  tk  
 So,  
 $5x = 42360$   
 Or,  $x = 8472$   
 Now, total Profit =  $20 \times 8472 = 169440$  tk  
 Answer: 169440 tk

2. Two-third of the faculty members of a department are female. Twelve of the male teachers are unmarried, while 60% of them are married. The total number of faculty members in the department is:

**Solution:**

Let, total members are  $x$   
 then female members are  $2x/3$   
 So, male members are =  $x - 2x/3 = x/3$   
 ATQ,  
 12 teachers are unmarried  
 Or,  $(100-60)\% = 40\% = 12$   
 So,  $100\% = 12 \times 100/40 = 30$   
 Again,  
 $x/3 = 30$   
 Or,  $x = 90$   
 Now, total faculty members are 90  
 Answer: 90

3. A trader marked the price of the T.V. 30% above the cost price of the T.V. and gave the purchaser 10% discount on the marked price, thereby gaining Rs. 340. Find the cost price of the TV?

**Solution:**

Let,  
 cost price of tv is  $x$  tk  
 Then, the market price =  $x + x \times 30/100 = 13x/10$  tk  
 At 10% discount on market price,  
 Selling price =  $13x/10 - 13x \times 10/10 \times 100 = 117x/100$  tk  
 Profit =  $117x/100 - x = 17x/100$  tk  
 ATQ,

$$17x/100 = 340$$

$$\text{Or, } x = 340 \times 100/17$$

$$\text{Or, } x = 2000$$

So, the cost price of the TV is 2000 tk

Answer: 2000 tk

4. A circular wheel 28 inches in diameter rotates (moves) the same number of inches per second as a circular wheel 35 inches in diameter. If the smaller wheel makes  $x$  revolutions per second, how many revolutions per minute does the larger wheel make in terms of  $x$  ?

**Solution:**

As we know,  
 1 revolution of circle = Circumference of that circle  
 Again,  
 Circumference of circle =  $2\pi r$   
 Given that,  
 Diameter = 28 inches  
 So, radius,  $r = 28/2 = 14$  inches  
 Now, circumference =  $28\pi$  inches  
 Hence,  
 $x$  revolutions per sec =  $28\pi x$  inches  
 Then in 60 sec  $28\pi x \times 60$  inches  
 ATQ,  
 $28\pi x \times 60 = 35\pi n$   
 $\Rightarrow n = 48x$   
 Thus the required no of revolutions is  $48x$   
 Answer:  $48x$

### PKB SEO- 2018

1. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is:

**Solution:**

Let,  
 The duration of the flight be  $x$  hrs  
 Original distance be  $= 600$  km  
 According to the question,  
 Original speed - Reduced speed = 200  
 $600/x - 600/(x+1/2) = 200$   
 Or,  $600/x - 1200/(2x+1) = 200$   
 Or,  $3/x - \{6/(2x+1)\} = 1$   
 Or,  $(6x+3-6x)/\{x(2x+1)\} = 1$   
 Or,  $2x^2 + 3x - 2x - 3 = 0$

$$\text{Or, } x(2x+3) - 1(2x-3) = 0$$

$$\text{Or, } (2x+3)(x-1) = 0$$

Now,

$$X-1=0$$

$$\text{Or, } X=1$$

And

$$2x+3=0$$

$$\text{Or, } X = -(3/2)$$

[neglecting the negative value]

Answer: 1 hour

2. A alone can reap a certain field in 15 days and B in 12 days. If A begins alone and after a certain interval B joins him, the field is reaped in 7.5 days. How long did A and B work together.

**Solution:**

Let,

'x' be the number of days that A and B worked together

And

Total work be 1 portion

A's 1 day's work =  $1/15$

B'S 1 day's work =  $1/12$

According to the question,

$$(7.5 - x)/1 + x(1/15 + 1/12) = 1$$

$$\text{Or, } (7.5 - x)/1 + 9x/60 = 1$$

$$\text{Or, } (30 - 4x + 9x)/60 = 1$$

$$\text{Or, } 30 + 5x = 60$$

$$\text{Or, } x = 6$$

Hence, A & B work together 6 days

Answer: 6 days

3. a, b, c, d, e are 5 consecutive numbers in increasing order, deleting one of them from the set decreased the sum of the remaining numbers by 20% of the sum of 5.

Which one of the number is deleted from the set?

**Solution:**

Since a, b, c, d, e are increasing order consecutive number,

$$b = a + 1,$$

$$c = a + 2,$$

$$d = a + 3,$$

$$e = a + 4$$

$$\text{The sum of five numbers} = a + a + 1 + a + 2 + a + 3 + a + 4 = 5a + 10$$

We are given that the sum decreased by 20% when one number was deleted

$$\text{New sum} = (5a + 10) - 20\% \text{ of } (5a + 10) = 4a + 8$$

$$\text{Then, } 4a + 8 = 5a + 10 - \text{Dropped number}$$

$$\text{Dropped number} = a + 2 = c$$

4. A tank can be filled by a tap in 20 minutes and by another tap in 60 minutes. Both the taps are kept open for 10 minutes and then the first tap is shut off. After this, the tank will be completely filled in what time?

**Solution:**

Work done by both in 1 minute

$$= (1/20 + 1/60) = 4/60 = 1/15$$

Work done by both in 10 minute

$$= 10/15 = 2/3 \text{ portion}$$

Remaining part

$$= (1 - 2/3)$$

$$= 1/3 \text{ portion}$$

Now,  $1/60$  part is filled in 1 minute

So,  $1/3$  part will be filled in 20 minute

Answer: 20 m in

5. Two persons are running in 3.6km/h and 7.2 km/h speed. A train passes them in 9 & 9.5 seconds. What is the length of the train and speed of the train?

**Solution:**

Let,

The speed of the train = x kmh

Know that,

Distance = speed × time

ATQ,

$$(x - 3.6) \times 9 = (x - 7.2) \times 9.5$$

$$\text{Or, } 9x - 32.4 = 9.5x - 68.4$$

$$\text{Or, } 0.5x = 36$$

$$\text{Or, } x = 72 \text{ kmh}$$

Here, speed of the train = 72 kmh

So, distance covered =  $\{(72 - 3.6) \times 9 \times (5/18)\} = 171$  meter

### Basic Bank (Assistant Manager)-2018

1. If a person invest Tk. 4000 at x% and Tk. 5000 at y%, he will get total Tk. 320 as interest. On the other hand if he invests Tk. 5000 at x% and Tk. 4000 at y%, he will get total Tk. 310 as interest. Find the value of x and y.

**Solution:**

ATQ,

$$\{4000x/100\} + \{5000y/100\} = 320$$

$$\text{Or, } 4x + 5y = 32 \text{ -----(i)}$$

Again,

$$\{5000x/100\} + \{4000y/100\} = 310$$

$$\text{Or, } 5x + 4y = 31 \text{ -----(ii)}$$

From (i)×5 - (ii)×4,

$$20x + 25y = 160$$

$$20x + 16y = 124$$

-----

$$\text{Or, } 9y = 36$$

$$\text{Or, } y = 4$$

From equation (I)

$$4x + 5y = 32$$

$$x = (32 - 5 \cdot 4) / 4 = 3$$

**Answer: (3,4)**

2. Working together pipe P, Q and T can fill a tank in 5 hours. Working together P and Q can fill it in 7 hours. Find in how many hours T can fill it?

**Solution:**

Part filled by P, Q and T in 1 hour =  $1/5$

Part filled by P and Q in 1 hour =  $1/7$

Part filled by T in 1 hour =  $1/5 - 1/7 = 2/35$

$2/35$  part is filled by T in 1 hour

So, Whole part is filled by T in  $35/2 = 17.2$  hrs

**Ans: 17.5 hours**

3. A box contains 5 green, 4 yellow and 3 white balls. Three balls are drawn at random. What is the probability that they are not of same colour?

**Solution:**

Total balls =  $5 + 4 + 3 = 12$

No of ways of drawing 3 marbles out of 12 =  ${}^{12}C_3 = 220$

event of getting 3 marbles of same color =  ${}^5C_3 + {}^4C_3 +$

${}^3C_3 = 10 + 4 + 1 = 15$

probability of getting 3 marbles of same color =  $15/220 = 3/44$

the probability that not getting marbles of same colour

=  $(1 - 3/44) = 41/44$

**Answer: 41/44**

4. There was a shipment of cars. Out of which half was black in colour. Remaining cars were equally blue, white and red. 70% of black cars, 80% of blue cars, 30% of white cars, 40% of red cars were sold. What percentage of total cars were sold?

**Solution:**

Let,

The total car was  $x$

So,

Black was =  $x/2$

Remaining cars =  $(x - x/2) = x/2$

ATQ,

Other cars are equal colours

So,

Blue, White, and Red are

$x/6, x/6, x/6$  respectively

Sold cars:

Black cars =  $x/2$  of 70% =  $7x/20$

Blue cars =  $x/6$  of 80% =  $2x/15$

White cars =  $x/6$  of 30% =  $x/20$

Red cars =  $x/6$  of 40% =  $x/15$

Total sold

=  $(7x/20) + (2x/15) + (x/20) + (x/15)$

=  $180x/300$

Required percentage

=  $(180x \times 100) / (300x)$

= 60%

**Answer: 60%**

5. A train passes a man in 3 second, and another train from opposite direction pass the man 4 second, both train same length. How long time need to pass the train each other?

**Solution:**

Let,

Both train length be  $x$

So,

Total length of two train =  $(x + x) = 2x$

Speed Of First train =  $x/3$

Speed Of second train =  $x/4$

We know that,

Time = Distance/speed

Or,  $T = 2x / (x/3 + x/4)$

Or,  $T = 2x \cdot 12 / 7x$

Or,  $T = 24/7$

Hence, 3.43 second need to pass each other

**Answer: 3.43 seconds**

6. A man works for certain hours. If his hourly payment increase by 20%, what percent of working hours he may reduce so that total income remain unchanged?

**Solution:**

Suppose,

hourly payment = 100tk

After increased 20% then new payment

=  $(100 + 20) = 120tk$

So,

TK 20 reduced from tk 120

Tk 100 :::::::::::::::::::: =  $\{ 20 \cdot 100 / 120 \}$

=  $\{ 100/6 \}$

= 16.67%

**Answer: 16.67%**

7. There were some books of novel and non-fiction. Board discuss 3 times for any novel and 5 times for any non-fiction. During a year they discuss total 52 times. If there were 12 books, how many of them were novel?

**Solution:**

Let,  
Novel books be  $x$   
Non Fiction books be  $(12-x)$   
According to the question,  
 $3x+5(12-x)=52$   
Or,  $3x+60-5x=52$   
Or  $-2x=-8$   
Or,  $x=4$ .  
So, Nobel books were 4

**Answer: 4**

### Karmasangsthan Bank DEO-2018

01. একটি বই ৬৫ টাকায় বিক্রি করলে বিক্রেতা ৩০% লাভ করে। ১০% লাভে বিক্রি করতে চাইলে নতুন বিক্রয়মূল্য কত হবে?

**Solution:**

৩০% লাভে, বিক্রয়মূল্য  $(১০০ + ৩০)$  বা ১৩০ টাকা হলে ক্রয়মূল্য = ১০০ টাকা  
বিক্রয়মূল্য ৬৫ টাকা হলে ক্রয়মূল্য =  $\frac{১০০ \times ৬৫}{১৩০} = ৫০$  টাকা  
টাকা  
১০% লাভে, ক্রয়মূল্য ১০০ টাকা হলে বিক্রয়মূল্য =  $(১০০ + ১০)$  বা, ১১০ টাকা  
ক্রয়মূল্য ৫০ টাকা হলে বিক্রয়মূল্য =  $\frac{১১০ \times ৫০}{১০০} = ৫৫$  টাকা (ans)

02. পিতা ও পুত্রের বয়সের সমষ্টি ৫০ বছর। যখন পুত্রের বয়স পিতার বর্তমান বয়সের সমান হবে তখন তাদের বয়সের সমষ্টি হবে ১০২ বছর। পিতা ও পুত্রের বর্তমান বয়স কত?

**Solution:**

ধরি, পিতার বয়স  $x$  বছর।  
পুত্রের বয়স =  $(৫০ - x)$  বছর  
পিতা, পুত্র অপেক্ষা বড় =  $x - (৫০ - x)$  বছর  
=  $(২ - ৫০)$  বছর  
যখন পুত্রের বয়স পিতার বর্তমান বয়সের সমান হবে তখন পুত্রের বয়স =  $x$  বছর  
এবং তখন পিতার বয়স হবে =  $x + ২x - ৫০ = ৩x - ৫০$   
প্রশ্নমতে,  $x + ৩x - ৫০ = ১০২$   
 $x + ৩x = ১০২ + ৫০$   
 $৪x = ১৫২$   
 $x = ৩৮$   
পিতার বর্তমান বয়স = ৩৮ বছর

এবং পুত্রের বর্তমান বয়স =  $(৫০ - x)$  বছর।  
=  $(৫০ - ৩৮)$  বছর  
= ১২ বছর

ans. পিতার বর্তমান বয়স ৩৮ বছর এবং পুত্রের বর্তমান বয়স ১২ বছর।

03. ৩০০ টাকার ৪ বছরের সরল মুনাফা ও ৪০০ টাকার ৫ বছরের সরল মুনাফা একত্রে ১৪৮ টাকা হলে, শতকরামুনাফার হার কত?

**Solution:**

৩০০ টাকার ৪ বছরের সুদ =  $(৩০০ \times ৪)$  বা ১,২০০ টাকার ১ বছরের সুদ  
৪০০ টাকার ৫ বছরের সুদ =  $(৪০০ \times ৫)$  বা ২,০০০ টাকার ১ বছরের সুদ  
 $১২০০ + ২০০০ = ৩২০০$  টাকার ১ বছরের সুদ = ১৪৮ টাকা  
১ টাকার বছরের সুদ =  $১৪৮/৩২০০$  টাকা  
১০০ টাকার ১ বছরের সুদ =  $(১৪৮ \times ১০০)/৩২০০$   
= ৪.৬২৫ টাকা (Ans)

04. যন্ত্রাংশে ৪০%, দালানে ২৫%, কাঁচামালে ১৫% এবং আসবাবপত্রে ৫% টাকা খরচ করার পর হাসানের হাতে ১,৩০৫ টাকা থাকে। তার কাছে কত টাকা ছিল?

**Solution:**

যন্ত্রাংশে ৪০%, দালানে ২৫%, কাঁচামালে ১৫% এবং আসবাবপত্রে ৫% টাকা খরচ করার পর হাসানের হাতে আর থাকে =  $১০০\% - (৪০ + ২৫ + ১৫ + ৫)\% = ১৫\%$   
প্রশ্নমতে, ১৫% এ অর্থের পরিমাণ = ১,৩০৫ টাকা।  
১০০% এ অর্থের পরিমাণ =  $(১৩০৫ \times ১০০)/১৫ = ৮,৭০০$  টাকা (ans)

### Janata bank EO (civil)-2017

1. A number when divided successively by 4 and 5 leaves remainders 1 and 4 respectively. When it is successively divided by 5 and 4, what will be the respective remainders?

**Solution:**

write the numbers as follows:

divisors:	4	5
remainders:	1	4

leave the right-most top number 5

multiply 4 and 4, then add 1 which is down below the divisor 4; you get 17

add this 17 to the product of 4, 5, (divisors) and k a constant

$20k+17$  (this is the number we want)

when  $k=1$ , the number is 37

when 37 is divided by 5, remainder is 2



when 7 is divided by 4, remainder is 3

2. A contractor undertakes to do a piece of work in 40 days. He engages 100 men at the beginning and 100 more after 35 days and completes the work in stipulated time. If he had not engaged the additional men, how many days behind schedule would it be finished?

**Solution:**

$(100 * 35) + (200 * 5)$  men can finish the work in 1 day

Therefore,

4500 men can finish the work in 1 day

100 men can finish it in  $4500/100 = 45$  days.

This is 5 days behind Schedule

3. In a certain office,  $1/3$  of the workers are women, 12 of the women are married and  $1/3$  of the married women have children. If  $1/4$  of the men are married and  $2/3$  of the married men have children, what part of workers is without children?

**Solution:**

Assume total number of workers be  $x$

Number of women =  $x/3$  and

number of men =  $2x/3$

Women married =  $1/2 * x/3 = x/6$

Women having children =  $1/3 * x/6 = x/18$

Married Men =  $3/4 * 2x/3 = x/2$

Men having Children =  $2/3 * x/2 = x/3$

Workers with children =  $x/3 + x/18 = 7x/18$

Hence,

workers without children =  $x - 7x/18 = 11x/18$

4. The average weight of three men A, B and C is 84 kg.

Another man D joins the group and the average now becomes 80 kg. If another man E, whose weight is 3 kg more than that of D, replaces A, then the average weight of B, C D and E becomes 79 kg. What is the weight of A?

**Solution:**

The average weight of A, B and C = 84kg

The total weight of A, B and C =  $84 * 3 = 252$ kg.

The average weight of A, B, C and D = 80 kg

The total weight of A, B, C and D =  $80 * 4 = 320$  kg

The weight of D =  $320 - 252 = 68$  kg

The weight of Q =  $68 + 3 = 71$  kg

The average weight of B, C, D and E = 79 kg

The total weight of B, C, D and E =  $79 * 4 = 316$  kg

The total weight of A, B, C and D - the total weight of B, C, D and E =  $320 - 316 = 4$  kg

A-E=4

A = 4+E

A = 4 + 71

A = 75 kg

### Bangladesh krishi Bank DEO 2018

01. শতকরা বার্ষিক ৭ টাকা মুনাফায় ৬৫০ টাকার ৬ বছরের মুনাফা কত ?

**Solution - 1:**

৭% মুনাফায়

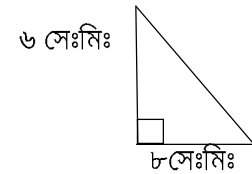
১০০ টাকার ১ বছরের মুনাফা = ৭ টাকা

১ টাকার ১ বছরের মুনাফা =  $\frac{৭}{১০০}$  টাকা

৬৫০ টাকার ১ বছরের মুনাফা =  $\frac{৭ * ৬৫০}{১০০}$  টাকা

৬৫০ টাকার ৬ বছরের মুনাফা =  $\frac{৭ * ৬৫০ * ৬}{১০০} = ২৭৩$  টাকা (ans)

02. একটি সমকোণী ত্রিভুজের সমকোণ সংলগ্ন ত্রিভুজক্ষেত্রের দৈর্ঘ্য ৬ সেঃ মিঃ এবং ৮ সেঃ মিঃ হলে এর ক্ষেত্রফল নির্ণয় করুন।



**Solution:**

আমরা জানি, সমকোণী ত্রিভুজের ক্ষেত্রফল =  $1/2$ (ভূমি x উচ্চতা)  
বর্গঃ সেঃমিঃ

$$= 1/2(৮ * ৬) = ২৪$$

বর্গ সেঃমিঃ (ans)

এখানে, ভূমি = ৮ সেমি উচ্চতা = ৬ সেমি

ত্রিভুজের ক্ষেত্রফল = ২৪ বর্গ সেঃমিঃ (ans)

### Sonali Bank Officer Cash 2018

01. A, B and C are partners. 'A' whose money has been in the business for 4 months claims  $1/8$  of the profits; 'B' whose money has been in the business for 6 months claims  $1/3$  of the profits. If 'C' had Tk.1560 in the business for 8 months, how much money did A and B contribute to the business? (15)

**Solution:**

A's share of profit =  $1/8$

B's share of profit =  $1/3$

So, C's share of profit =  $1 - (1/8 + 1/3) = 13/24$

Ratio of profit of A, B and C =  $1/8 : 1/3 : 13/24 = 3 : 8 : 13$

Let, A contributes Tk. x for 4 months and B contribute Tk. y for 6 months.

Ratio of investments of A, B and C =  $4x : 6y : (1560 \times 8) = 4x : 6y : 12480$

Now,

$$4x : 12480 = 3 : 13$$

$$\text{Or, } 4x/12480 = 3/13$$

$$\text{Or, } 52x = 12480 \times 3$$

$$\text{Or, } x = (12480 \times 3) / 52$$

$$\text{Or, } x = 720$$

Again,

$$6y : 12480 = 8 : 13$$

$$\text{Or, } 6y/12480 = 8/13$$

$$\text{Or, } 78y = 12480 \times 8$$

$$\text{Or, } y = (12480 \times 8) / 78$$

$$\text{Or, } y = 1280$$

So, contribution of A and B is Tk. 720 and Tk. 1280 respectively.

Ans: Tk. 720 and Tk. 1280

**02. Machine A, working alone at its constant rate, produces  $x$  pounds of peanut butter in 12 minutes. Machine B, working alone at its constant rate, produces  $x$  pounds of peanut butter in 18 minutes. How many minutes will it take machines A and B, working simultaneously at their respective constant rates, to produce  $x$  pounds of peanut butter? (15)**

**Solution:**

Machine A and B produce in 1 minute =  $(x/12 + x/18) = 5x/36$

$5x/36$  pounds is produced by both machines in 1 minute

Or, 1 pounds is produced by both machines in  $36/5x$  minute

Or,  $x$  pounds is produced by both machines in  $(36/5x \times x) = 7.2$  minute

Ans: 7.2 minutes

**03. Two trains running at the rate of 75 km and 60 km an hour respectively on parallel rails in opposite directions, are observed to pass each other in 8 seconds and when they are running in the same direction at the same rates as before, a person sitting in the faster train observes that he passes the other in 31 1/2 seconds. Find the lengths of the trains. (15)**

**Solution:**

Moving in opposite direction:

Relative speed of two trains =  $(75 + 60)$  km/hr = 135

km/hr =  $(135 \times 5/18)$  m/s =  $75/2$  m/s

Length of the both trains =  $(75/2 \times 8)$  meters = 300 meters

When moving in the same direction,

Relative speed of two trains =  $(75 - 60)$  km/hr = 15 km/hr =  $(15 \times 5/18)$  m/s =  $25/6$  m/s

So, Length of the slower train =  $(25/6 \times 31.5)$  meters = 131.25 meters

Thus, length of the faster train =  $300 - 131.25 = 168.75$  meters

Ans: 131.25 meters and 168.75 meters.

**04. A gardener plants two rectangular gardens in separate regions on his property. The first garden has an area of 600 square feet and a length of 40 feet. If the second garden has a width twice that of the first garden, but only half of the area, what is the ratio of the perimeter of the first garden to that of the second garden? (15)**

**Solution:**

Width of the first garden =  $600/40 = 15$  feet.

ATQ,

width of the second garden =  $15 \times 2 = 30$  feet

and, area of the second garden =  $\frac{1}{2} \times 600 = 300$  sq. feet

So, length of the second garden =  $300/30 = 10$  feet

Now, Perimeter of the first garden : Perimeter of the second garden

$$= 2(40+15) : 2(10+30)$$

$$= 110 : 80$$

$$= 11 : 8$$

**05. In a certain class, 1/5 of the boys are shorter than the shortest girls in the class and 1/3 of the girls are taller than the tallest boy in the class. If there are 16 students in the class and no two people have the same height, what percent of the students are taller than the shortest girl and shorter than the tallest boy? (15)**

**Solution:**

Total students = 16

1/5 implies that no. of boys must be a multiple of 5

And

1/3 implies that the no. of girls must be a multiple of 3.

So, Boys = 10 and Girls = 6 which satisfy the no. of total students  $(10 + 6) = 16$

Shorter boys =  $(1/5 \times 10) = 2$  and shortest girl = 1

Taller girls =  $(1/3 \times 6) = 2$  and tallest boy = 1

Taller than shortest girls and shorter than tallest boy =  $(16 - 2 - 2 - 1 - 1) = 10$

So, Required percentage =  $(10/16 \times 100) = 62.5\%$

Ans: 62.5%



## 06. Translation: English to Bangla (15)

Sonali Bank Officer Cash Written Exam 2018 : Translation	
Bangladesh is now apparently in the grip of all sorts of pollution like air pollution and water pollution.	স্পষ্টতই বাংলাদেশ এখন সব ধরনের দূষণ, বিশেষ করে বায়ু এবং পানি দূষণের কজায় রয়েছে।
The dwellers of the urban areas are the worst sufferers of such pollution.	শহুরে অধিবাসীরাই এই দূষণের সবচেয়ে বড় শিকার।
The indiscriminate industrialization process in Bangladesh over the past decades has created significant environmental problems.	গত কয়েক দশকে বাংলাদেশে নিরবিচ্ছিন্ন শিল্পায়ন প্রক্রিয়া গুরুত্বপূর্ণ পরিবেশগত সমস্যার সৃষ্টি করেছে।
We will now know about some of the common types of environmental pollutions.	আমরা পরিবেশগত দূষণের সাধারণ কিছু ধরণ সম্পর্কে এখন জানতে পারব।
Air pollution comes from a wide variety of sources.	বায়ুদূষণের উৎস নানাবিধ।
In Bangladesh poisonous exhaust from industrial plants, brick kilns, old or poorly serviced vehicles and dust from roads and construction sites are some of the major sources of air pollution.	আমাদের দেশে শিল্প প্লট, ইট ভাটা, পুরাতন বা অপেক্ষাকৃত নাজুক যানবাহন এবং সড়ক ও নির্মাণস্থল থেকে বিষাক্ত ধূলাবালিও বায়ু দূষণের প্রধান কারণ।
We can reduce this type of pollution by making less use of motor vehicles and avoiding the use of vehicles older than 20 years.	আমরা মোটর গাড়ির ব্যবহার কম করে এবং ২০ বছরের চেয়ে পুরাতন যানবাহন ব্যবহার না করে এই ধরনের দূষণ কমাতে পারি।

## 07. Translation: Bangla to English (15)

Sonali Bank Officer Cash Written Exam 2018 : Translation	
জনসংখ্যা সমস্যা আমাদের দেশের একটি বড় সমস্যা।	Population problem is a giant problem in our country.
আমাদের জনসংখ্যা বেড়েই চলেছে।	It is growing day by day.
দেশের লোকের স্বাস্থ্য তেমন ভালো নয়।	The health of the people is not so good.

তাদের অনেকেই অপুষ্টিতে ভুগছে।	Many of them are suffering from malnutrition.
যে পরিমাণ খাদ্য তাদের জন্য প্রয়োজন তা তারা পায় না।	They do not get as much food as they need.
আমরা পর্যাপ্ত পরিমাণে খাদ্য উৎপাদন করতে পারি না।	It is because we cannot produce sufficient food.
অধিক খাদ্য উৎপাদন করে খাদ্য চাহিদা পূরণ করা সম্ভব।	It is possible to meet demand of food by producing more.
সেজন্য আমাদের প্রচুর পরিশ্রম করতে হবে।	That's why we have to work a lot.
আমাদের খাদ্য সমস্যা সমাধানের জন্য বৈজ্ঞানিক পদ্ধতিতে চাষ করতে হবে।	We shall have to cultivate in scientific ways to solve our food problem.

## 08. English Comprehension (15)

Read the following passage and answer the questions:

Marina Hills High School is fighting pollution in an unusual way. It's planting trees! In an effort to fight pollution and help the environment, the Marina Hills Ecology Club offers free trees to institutions willing to plant them on their grounds. Among those that took advantage of the offer was Marina Hills High School. After consulting with his teachers on where to plant the trees, Principal Max Webb contacted the Ecology Club. But when the seedlings arrived, Webb had an idea. Instead of planting the young trees in front of the school, he thought it would be better to put them behind the school, where the sun gets very hot in the afternoon. "It gets so hot inside the building that the students start to sweat during their afternoon classes," said Webb. "Now the shade from our trees will bring them some relief." "There was no argument from the teachers," he added. "When I proposed the idea, everyone said, "Now why didn't I think of that!" The relief won't come until the trees grow taller, but the school will not have to wait long because it requested two species of trees that grow quickly. "Time is key and we wanted our trees to get big fast," said Webb. "We were given a wide choice, from shrubs to fruit trees. We requested eucalyptus and willow trees." Webb said he is also looking forward to finally seeing some wildlife in the school yard at Marina Hills High School. "If all you have is a grass lawn with no trees, you can't expect the local birds to come and visit," said Webb. "They have no place to make their nests. Now that will change, and we'll be able to see

birds from our classroom windows.” (a) What would be the most appropriate headline for this article?

(b) What did the Ecology Club do for Marina Hills High School?

(c) What problem does Principal Webb talk about?

(d) What can be inferred from the article about eucalyptus and willow trees?

(e) What does Principal Webb imply about the local birds?

#### 09. Business Letter writing in English (15)

Write an application to the Honorable Minister for Finance highlighting the importance of reduction of taxes on imported industrial raw materials.

#### 10. Business Letter writing in Bangla (15)

আপনার এলাকায় পাবলিক লাইব্রেরি স্থাপনের প্রয়োজনের কথা জানিয়ে সংস্কৃতি মন্ত্রণালয়ের সচিবের কাছে একটি আবেদন লিখুন।

#### 11. Focus Writing in English (20)

Write an essay on “Modern Technology and Globalization”

#### 12. Focus Writing in Bangla (30)

“বৈশ্বিক উন্নতি বৃদ্ধি এবং বাংলাদেশে এর প্রভাব সম্পর্কে বাংলায় একটি রচনা লিখুন।

### Combined 3 bank senior officer 2018

01. A train 300m long along overtook a man walking along the line in the same direction at a speed of 4 km/h and passed him in 30 sec. The train reached the station in 15 minutes after it had passed the man. In what time did the man reach the station?

**Solution:**

Let,

The speed of the train be  $x$  km/hr

Since the direction is same,

The relative speed

$$= (x - 4) \text{ km/hr}$$

$$= (x - 4)1000/3600 \text{ m/sec}$$

$$= (5/18) \times (x - 4)$$

ATQ,

$$300 / \{ (5/18) \times (x - 4) \} = 30$$

$$\text{Or, } (300 \times 18) / 5(x - 4) = 30$$

$$\text{Or, } 150(x - 4) = 300 \times 18$$

$$\text{Or, } x - 4 = 300 \times 18 / 150$$

$$\text{Or, } x - 4 = 36$$

$$\text{Or, } x = 40$$

So, the speed of the train is  $x = 40$  km/hr

After passing the man, the train travels for 15 minutes.

So, distance covered by the train =  $40 \times 15/60$  km = 10 km.

Now, the man needs time =  $10 \text{ km} / 4 \text{ km/hr} = 2 \frac{1}{2}$  hr to reach the station.

02. Two boats on opposite banks of a river start moving towards each other. They first pass each other 1400 meter from one bank. They each continue to the opposite bank, immediately to around and start back to the other bank. When they pass each other a second time, they are 600 meters from the other bank. We assume that each boat travels at a constant speed all along the journey. Find the width of the river?

**Solution:**

Let,

width of the river be  $x$  meter.

At 1<sup>st</sup> passing,

Boat 1 moves 1400 meter

So, Boat 2 moves =  $x - 1400$  meter

At 2<sup>nd</sup> passing,

Boat 1 moves =  $(x - 1400 + 600)$  meter =  $x - 800$  meter

Boat 2 moves =  $1400 + (x - 600)$  meter =  $x + 800$  meter

Now,

$$1400 / (x - 1400) = (x - 800) / (x + 800)$$

$$\text{Or, } x^2 - 800x - 1400x + 800 \times 1400 = 1400x + 800 \times 1400$$

$$\text{Or, } x^2 - 3600x = 0$$

$$\text{Or, } x(x - 3600) = 0$$

$$x = 0 \text{ (Not Acceptable)}$$

$$x - 3600 = 0$$

$$\text{or, } x = 3600$$

03. In a mixture of milk and water, their ratio is 4:5 in the first container. And the same mixture has ratio 5:1 in the second container. In what ratio should the mixture be extracted from such container and poured into the third container, so that the ration of milk and water comes to 5:4 in the third container.

**Solution:**

Let 1st container contains  $X$  liters mixture of milk and water.

Milk in 1st container =  $4/9x$

Water in 1st container =  $5/9x$

Let 2nd container contains  $Y$  liters mixture of milk and water

Milk in 2nd container =  $5/6y$

Water in 2nd container =  $1/6y$

Let the two mixture combine such that the milk to water ratio is 5:4

So,

$$(4x/9 + 5y/6) / (5x/9 + y/6) = 5/4$$

$$\text{or, } (8x + 15y)/(10x + 3y) = 5/4$$

$$\text{Or, } 50x + 15y = 32x + 60y$$

$$\text{Or, } 18x = 45y$$

$$\text{Or, } x/y = 45/18$$

$$\text{Or, } x/y = 5/2$$

Hence mixture from first container and second container should be mixed in the ratio 5/2 for milk and water to be in ratio 5:4.

**04. A can do a piece of work in 120 days and B can do it in 150 days. They work together for 20 days. Then B leaves and A continues the work alone. 12 days after that C joins A and the work is completed in 48 days more. In how many days can do it if he works alone?**

**Solution:**

$$\text{A's 1 day's work} = 1/120$$

$$\text{B's 1 day's work} = 1/150$$

$$\text{(A+B)'s 1 day's work} = (1/120 + 1/150) = 9/600 = 3/200$$

$$\text{(A+B)'s 20 day's work} = (3/200) \times 20 = 3/10$$

$$\text{A's 12 day's work} = (1/120) \times 12 = 1/10$$

$$\text{Remaining work} = 1 - (3/10 + 1/10) = 3/5$$

$$\text{(A+C)'s 48 day's work} = 3/5$$

$$\text{(A+C)'s 1 day's work} = (3/5) \times (1/48) = 3/240$$

$$\text{C's 1 day's work} = (3/240 - 1/120) = 1/240$$

So, C does the work in 240 days.

**05. The number of girls in a school is 160 more than 1/3 of the total enrollment of the school. The number of boys is 280 more than 1/7 of the total enrollment in the school. How many pupils in the school are girls and boys?**

**Solution:**

Let,

the total enrollment of students be T,

number of girls G and the boys B.

ATQ,

$$G = 160 + T/3$$

$$B = 280 + T/7$$

$$T = G + B = 160 + T/3 + 280 + T/7,$$

$$\text{Or, } 21T = 3360 + 7T + 5880 + 3T$$

$$\text{Or, } 11T = 3360 + 5880 = 9240$$

$$\text{Or, } T = 9240/11 = 840$$

$$\text{So } G = 160 + 840/3 = 440 \text{ and}$$

$$B = 280 + 840/7 = 400$$

**06. A manufacturing company uses two machines A and B with different production capacities. When working alone, machine A can produce a production lot in 5 hours and**

**machine B can produce the same lot in x hours. When the two machines operate simultaneously to produce the same production lot, it takes them 2 hours to complete the job. How many hours will the machine B take to produce the production lot alone?**

**Solution:**

$$\text{A's 1 hour work} = 1/5$$

$$\text{B's 1 hour work} = 1/x$$

$$\text{So, (A+B)'s 1 hour work} = (1/5 + 1/x)$$

As (A+B) take 2 hours to complete the job, they take 1 hour to do 1/2 of the job.

So,

$$1/5 + 1/x = 1/2$$

$$\text{Or, } 1/x = 1/2 - 1/5$$

$$\text{Or, } 1/x = 3/10$$

$$\text{Or, } x = 10/3 = 3.33 \text{ hrs}$$

#### 07. Translation: English to Bangla

combined 3 bank senior officer written: Translation	
Chikungunya is an infection by the chikungunya Virus.	চিকুনগুনিয়া ভাইরাসের দ্বারা চিকুনগুনিয়া রোগের সংক্রমণ হয়।
Symptoms include fever and joint pain.	এর উপসর্গগুলোর মধ্যে লিভার এবং গাঁটে গাঁটে ব্যথা অন্তর্ভুক্ত।
These typically occur two to twelve days after exposure.	সংক্রমণের সাধারণত দুই থেকে বারো দিনের মধ্যে এটা প্রকাশ পায়।
Other symptoms may include headache, muscle pain, joint swelling, and rash.	অন্যান্য উপসর্গগুলির মধ্যে রয়েছে মাথাব্যথা, পেশী ব্যথা, ফুলে উঠা এবং ফুসকুড়ি।
Most people are better within a week, however, Occasionally the joint pain may last for months.	বেশিরভাগ মানুষ এক সপ্তাহের মধ্যেই আরোগ্য লাভ করে, তবে, মাঝে মাঝে গাঁটের ব্যথা কয়েক মাস ধরে থাকতে পারে।
The risk of death is around 1 to 1000.	এ রোগে মৃত্যুর ঝুঁকি ১ থেকে ১০০০ এর কাছাকাছি।
The virus is spread between people by two types of mosquitoes: Aedes albopictus and aedes aegypti.	চিকুনগুনিয়ার ভাইরাস দুই ধরনের মশা দ্বারা মানুষের মাঝে ছড়িয়ে পড়ে: একটা হচ্ছে এডিস আলবপিক্টাস এবং অন্যটি এডিস ইজিপ্টি।

They mainly bite during the day.	এই মশাগুলো সাধারণত দিনে কামড়ায়।
The virus may circulate within a number of animals including birds and rodents.	পাখি এবং সুচালো দাঁতবিশিষ্ট প্রাণীর মধ্যেও এ ভাইরাস ছড়িয়ে পড়তে পারে।
Diagnosis is by either testing the blood for the virus's RNA or antibodies to the virus.	রক্তে ভাইরাসটির RNA বা অ্যান্টিবডিগুলি পরীক্ষার মাধ্যমে এই রোগ নির্ণয় করা হয়।
The best means of prevention is overall mosquito control and the avoidance of bites in areas where the disease is common.	চিকুনগুনিয়া রোগ প্রতিরোধের সর্বোত্তম উপায় হচ্ছে সামগ্রিকভাবে মশার বংশবিস্তার এবং যে সকল এলাকায় রোগটির প্রাবল্য তা নিয়ন্ত্রণ করা।
This may be partly achieved by decreasing mosquitoes' access to water and with the use of insect repellent and mosquito nets.	নিয়ন্ত্রণ কার্য কিছুটা সম্ভব মশাদের জলাবদ্ধ জায়গায় অবস্থানে বাধাদান এবং সেইসাথে কীটপতঙ্গের প্রতিরোধক ও মশারি ব্যবহারের মাধ্যমে।
There is no vaccine and no specific treatment as of 2016.	২০১৬ সাল পর্যন্ত এ রোগের কোন টিকা নেই এবং কোনও নির্দিষ্ট চিকিৎসা ছিল না।
Recommendations include rest, fluids and medications to help with fever and joint pain.	রোগ নিরাময়ের সুপারিশ হিসেবে জ্বর এবং ব্যথা কমানোর জন্য পর্যাপ্ত বিশ্রাম, তরল গ্রহণ ও ওষুধ সেবন করা যায়।

## 08. Translation: Bangla to English

<b>combined 3 bank senior officer written: Translation</b>	
বাংলাদেশের তথ্যপ্রযুক্তি খাতে অন্যতম প্রতিশ্রুতিশীল ও সুসংগঠিত প্রতিষ্ঠান হচ্ছে বাংলাদেশ অ্যাসোসিয়েশন অব সফটওয়্যার অ্যান্ড ইনফরমেশন সার্ভিসেস (বেসিস)।	Bangladesh Association of Software and Information Services (BASIS) is one of the most committed and well-organized organizations in the IT sector of Bangladesh
দিন দিন আমাদের দেশের ইন্টারনেট ব্যবহারকারী বেড়েই চলেছে।	Day by day, the number of internet users of our country are growing.
এই ইন্টারনেট সবাই যাতে ইতিবাচক হিসেবে ব্যবহার করে, সে ক্ষেত্রে বেসিস অসামান্য ভূমিকা পালন করতে পারে।	Basis can play an outstanding role in the case for the people to use internet positively.

সম্প্রতি দেশের মুঠোফোন অপারেটরগুলো ফোরজির লাইসেন্স পেয়েছে।	Recently, the mobile phone operators of the country have got the license of 4G.
এটা আমাদের দেশের তথ্যপ্রযুক্তির জন্য একটি বড় মাইলফলক হিসেবে বিবেচিত হয়েছে।	It has been considered as a major milestone for the information technology of our country.
কারণ, ইন্টারনেটের ধীরগতি এটা ব্যবহার করতে অনেক সমস্যার সৃষ্টি করত।	Because the slowness of the speed of internet, it used to create many problems in using.
দেশের সর্বত্র সবার মধ্যে তথ্যপ্রযুক্তির আলো ছড়িয়ে দিতে একটি সুসংগঠিত সংগঠন হিসেবে বেসিসকে আরও বলিষ্ঠ ভূমিকা রাখতে হবে।	BASIS, as a well-organized organization, will have to play a robust role to spread the light of information technology across the country.

## 09. Letter writing in English:

Write an application in response to the following advertisement: Apply for the post of Secretary in a business industry.

## 10. Letter Writing in Bangla:

সড়ক দুর্ঘটনা রোধের ব্যাপারে আপনার পরামর্শ সংবাদপত্রে প্রকাশের জন্য একটি দৈনিক পত্রিকার সম্পাদকের নিকট পত্র লিখুন।

## 11. Focus writing in English

Write an essay on "The Role of Commercial Bank in Developing Small and Medium Scale Industries in Bangladesh".

## 12. Focus writing in Bangla:

রেনিট্যাঙ্ক ও আমাদের সামাজিক জীবন সম্পর্কে একটি প্রবন্ধ রচনা করুন।

## 13. English Comprehension

Read the following passage and answer the questions below:

Water pollution refers to any change in natural water that may impair further use of water, caused by the introduction of organic or inorganic substances or by a change in the temperature of water. Waste water emanate from the following sources: Municipal waste water, Industrial waste water, Agricultural runoff, Storm water and urban runoff. During recent years, chemical pollution of water bodies has increased many fold and people who are responsible for human health have become increasingly concerned about water pollution. Eutrophication is the enrichment of water

by nutrients from natural or man-made sources, or all the nutrients, nitrogen and phosphorus are most often considered as key nutrients responsible for promotion of growth of algae and other plants resulting in anoxic condition.

Pesticides used in agriculture reach natural or man-made water bodies and cause disruption to one or more physiological functions of aquatic organisms by interfering with the production of necessary biochemical e.g., D.D.T. which consists of aromatic ring, mimic the effects of estrogen in aquatic animals such as fish, where the reproduction is disturbed. As such non-biodegradable pesticides accumulate in the body of aquatic organisms through the process of bio magnification. Along with agricultural runoff many toxic chemicals reach water bodies through industrial effluents.

The structure of a molecule is the key to its biodegradability. In general polymers with mixed backbone linkage (carbon-oxygen or carbon-nitrogen) show greater susceptibility to hydrolysis. than carbon-carbon backbone polymers. Polymers with aromatic components or branched region tend to be more resistant to attack by microorganisms than straight chain aliphatic compounds. Most common system practiced for control of water pollution is the use of waste water treatment plants, based on the physical, chemical and biological treatment steps generally known as preliminary, primary, secondary and tertiary treatments. It must be remembered that the steps of treatment and type of treatment will depend upon the constituents and their concentrations in the effluent and final usage of water.

- Why did the quality of water deteriorated due to human activities?
- Why the protection of human health has become a problem?
- Justify the statement "Pesticides are useful and at the same time harmful to the ecosystem".
- What determines biodegradability of a chemical?
- How polluted water is treated for safe disposal.

### Combined 8 Bank SO 2018

1. Two rabbits start running towards each other, one from A to B and another from B to A. They cross each other after one hour and the first rabbit reaches B,  $\frac{5}{6}$  hour before the second rabbit reaches A. If the distance between A and B is 50 km. what is the speed of the slower rabbit?

**Answer: 20 km/hr**

**Solution:**

Let second rabbit takes  $x$  hr with speed  $s_2$

First rabbit takes  $x - \frac{5}{6}$  hr with speed  $s_1$

Total distance = 50km

$$S_1 = 50 / (x - (5/6))$$

$$S_2 = 50/x$$

As they cross each other in 1hr...

$$\text{Total speed} = s_1 + s_2$$

$$\text{Now, } T = D / S$$

$$50 / (s_1 + s_2) = 1$$

$$x = 5/2, 1/3$$

Put  $x = 5/2$  in  $s_2 \rightarrow 20 \text{ km/hr}$

**Shortcut:**

Let, speed of faster & slower rabbit be  $x$  &  $y$  respectively

$$\text{Atq, } x + y = 50$$

$$\text{And, } 50/y - 50/x = 5/6$$

From the above equations,  **$y = 20 \text{ km/h (ans)}$**

2. Pipe A can fill a Tank in 18 Hours, Pipe B can empty a Tank in 12 Hours, Pipe C can fill Tank in 6 Hours. The Tank is already filled up to  $\frac{1}{6}$  of its capacity. Now Pipe A is opened in the First Hour alone, Pipe B is opened in the Second Hour alone and Pipe C is opened in the Third Hour alone. This cycle is repeated until the Tank gets filled. Then in How many Hours does the rest of Tank gets filled?

**Solution:**

$$\text{In First Hour Tank filled} = \frac{1}{6} + \frac{1}{18}$$

$$\text{Second Hour} = \frac{1}{6} + \frac{1}{18} - \frac{1}{12}$$

$$\text{Third Hour} = \frac{1}{6} + \frac{1}{18} - \frac{1}{12} + \frac{1}{6} = \frac{11}{36} \text{ is filled}$$

$$\frac{25}{36} \text{ is left}$$

$$\text{From then 3 hours work} = \frac{1}{18} - \frac{1}{12} + \frac{1}{6} = \frac{5}{36}$$

$$5 * 3 \text{ Hours} = 5 * \frac{5}{36} = \frac{25}{36}$$

$$\text{Total} = 5 * 3 + 3 = 18 \text{ Hours}$$

**Shortcut:**

$$\text{Remaining part} = 1 - \frac{1}{6} = \frac{5}{6}$$

$$\text{In 3hrs 3pipes can fill} = \frac{1}{18} - \frac{1}{12} + \frac{1}{6} = \frac{5}{36}$$

So,

$$\text{To fill } \frac{5}{6} \text{ part, it requires} = 3 * \frac{36}{5} * \frac{5}{6} = 18 \text{ hrs (ans)}$$

**Ans: 18 Hours**

3. A Jar contains 'x' liters of Milk, a seller withdraws 25 liter of it and sells it at tk. 20 per liter. He then replaces it with water. He repeated the process total three times. Every time while selling he reduces selling price by tk. 2. After this process Milk left in the mixture is only 108 liters so he decided to sell the entire Mixture at tk. 15 per liter. Then



how much profit did he earned if bought Milk at tk. 20 per liter?

**Ans: 70 Tk. profit**

**Shortcut:**

Seller sells Milk at Tk. 20, 18 and 16 respectively for three times

$$= 25 * (20 + 18 + 16) = 1350$$

$$108 = x(1 - 25/100)^3$$

$$x = 256 \text{ liter}$$

$$\text{He sold entire 256 at Tk. 15} = 256 * 15 = 3840$$

$$\text{Cost price} = 256 * 20 = 5120$$

$$\text{profit} = 3840 - 5120 = 70 \text{ Tk. (ans)}$$

**Ans: 70 Tk. Profit**

4. A container contains milk and water in the ratio of 3:1.

How much mixture should be taken out and replaced with milk so that the container contains milk and water in the ratio of 15:4. What portion of original mixture had been replaced by milk.

**Solution:**

Let total original quantity = x litres, Let y litres replaced.

After y litres of mixture drawn out,

$$\text{Milk} = \left[ \frac{3}{3+1} \right] * x - \left[ \frac{3}{3+1} \right] * y$$

$$\text{Water} = \left[ \frac{1}{3+1} \right] * x - \left[ \frac{1}{3+1} \right] * y$$

Now y litres of milk poured in can. Milk becomes  $\left( \frac{3}{4} \right) * x -$

$$\left( \frac{3}{4} \right) * y + y = \left( \frac{3}{4} \right) * x + \left( \frac{1}{4} \right) * y$$

$$\text{Now } \left[ \left( \frac{3}{4} \right) * x + \left( \frac{1}{4} \right) * y \right] / \left[ \left( \frac{1}{4} \right) * x - \left( \frac{1}{4} \right) * y \right] = 15/4$$

$$\text{Solve, } y = \left( \frac{3}{19} \right) * x$$

So  $\frac{3}{19}$  of original mixture removed.

**Ans: 3/19 portion had been replaced by milk**

5. A man rows to a place 40 km distant and back in a total of 18 hours. He finds that he can row 5 km with the stream in the same time as 4 km against the stream. What is the speed of boat in still water?

**Solution:**

Suppose he moves 5 km downstream in x hours

Then, downstream speed  $a = 5/x$  km/hr

Speed upstream speed  $b = 4/x$  km/hr

$$40 / (5/x) + 40 / (4/x) = 18$$

$$8x + 10x = 18$$

$$x = 1$$

$$a = 5 \text{ km/hr, } b = 4 \text{ km/hr}$$

$$\text{speed of boat} = \frac{1}{2} (5 + 4) = 9/2 \text{ km/hr} = 4.5 \text{ Km/hr}$$

**Shortcut:**

Speed in downstream = 5/t

Speed in upstream = 4/t

$$\text{ATQ, } 40/(5/t) + 40/(4/t) = 18$$

$$\Rightarrow t = 1$$

So,

Speed in downstream = 5

Speed in upstream = 4

Now speed of boat in still water =  $(5+4)/2 = 4.5$  km/hr (ans)

**Ans: Speed of the boat in still water 4.5 km/hr**

6. Probability Solution A Bag contains some White and Black Balls. The probability of picking two white balls one after other without replacement from that bag is  $14/33$ . Then what will be the probability of picking two Black balls from that Bag if bag can hold maximum 15 balls only?

**Solution:**

$$\frac{Wc2}{(B+W)c2} = 14/33$$

$$\frac{W(W-1)}{(W+B)*(B+W-1)} = 14/33$$

Now expressing  $14/33$  in the above format by multiplying 4 in numerator and denominator

$$\frac{W(W-1)}{(W+B)*(B+W-1)} = \frac{8*7}{12*11} \text{ (note = balls < 15)}$$

$$W = 8$$

$$W+B = 12 \quad B = 4$$

$$\text{Probability} = \frac{4c2}{12c2} = 1/11$$

**Shortcut:**

$$4/33 = (8/12) * (7/11)$$

So we can write,

$$\text{Total ball} = 12$$

$$\text{White ball} = 8$$

$$\text{Black ball} = 12 - 8 = 4$$

$$\text{So, Required probability} = \frac{4c2}{12c2} = 1/11 \text{ (ans)}$$

**Ans: 1/11**

### Combined 2 Banks Officer(General) 2018

1. 1 machine X can print one lakh books in 8 hours, machine Y can print the same number of books in 10 hours while machine Z can print them in 12 hours. All the machines are started at 9 A.M. while machine X is closed at 11 A.M. and the remaining two machines complete work.

Approximately at what time will the work?

**Solution:**

$$(X + Y + Z)'s \text{ 1 hour's work} = \left( \frac{1}{8} + \frac{1}{10} + \frac{1}{12} \right) = \frac{37}{120}$$

$$\text{Work done by X, Y and Z in 2 hours} = \left( \frac{37}{120} \times 2 \right) = \frac{37}{60}$$

$$\text{Remaining work} = \left( 1 - \frac{37}{60} \right) = \frac{23}{60}$$

$$(Y + Z)'s \text{ 1 hour's work} = \left( \frac{1}{10} + \frac{1}{12} \right) = \frac{11}{60}$$

Now,  $\frac{11}{60}$  work is done by Y and Z in 1 hour.

$$\text{So, } \frac{23}{60} \text{ work will be done by Y and Z in } \left( \frac{60 \times 23}{11 \times 60} \right) = \frac{23}{11} \text{ hours} \approx 2 \text{ hours.}$$

So, the work will be finished approximately 2 hours after 11 A.M., i.e., around 1 P.M.

**2. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. How many hours will take C alone to fill the tank ?**

**Solution:**

Combined rate of work

$$1/a + 1/b + 1/c = 1/6$$

$$\text{Work done by 3 in 2 hrs} = 2 \times 1/6 = 1/3$$

Work left to be done

$$1 - 1/3 = 2/3.$$

This work is done by a&b in 7 hrs.

Thus Rate of work is

$$\text{Work/time} = 2/3/7 = 2/21$$

Therefore  $1/c = 1/6 - 2/21$ .

Solving the equation  $c = 14$  hr

**3. A man went downstream for 28 km in a motor boat and immediately returned. It took the man twice as long to make the return trip. If the speed of the river flow were twice as high, the trip downstream and back would take 672 minutes. Find the speed of the boat in still water and the speed of the river flow.**

**Solution:**

Let the speed of the boat =  $p$  kmph

Let the speed of the river flow =  $q$  kmph

From the given data,

$$2 \times \left\{ \frac{28}{(p + q)} \right\} = \frac{28}{(p - q)}$$

$$\Rightarrow 56p - 56q - 28p - 28q = 0$$

$$\Rightarrow 28p = 84q$$

$$\Rightarrow p = 3q.$$

Now, given that if

$$\frac{28}{(3q + 2q)} + \frac{28}{(3q - 2q)} = 672/60$$

$$\Rightarrow \frac{28}{5q} + \frac{28}{q} = 672/60$$

$$\Rightarrow q = 3 \text{ kmph}$$

$$\Rightarrow p = 3q = 9 \text{ kmph}$$

Hence, the speed of the boat =  $p$  kmph = 9 kmph and the speed of the river flow =  $q$  kmph = 3 kmph.

**4. Rahim has 30 marbles, 18 red & 12 blue marbles. Karim has 20 marbles. The ratio of red & blue marbles is equal to Rahim marbles. How many more blue marbles Rahim has?**

**Solution:**

Let blue marbles for Karim be  $x$

The, red marbles for Karim will be  $20 - x$

Rahim has 30 marbles, 18 of which are red and 12 of which are blue.

$$\text{Thus, red/blue} = 18/12 = 3/2$$

We use the same ratio for Karim.

$$\text{Red/blue} = 3/2 = (20-x)/x$$

$$3 \times x = 2 \times (20 - x)$$

$$3x = 40 - 2x$$

$$5x = 40$$

$$x = 40/5 = 8$$

Rahim has 12 blue marbles. So, he has  $12 - 8 = 4$  more blue marbles than Karim.

**5. A train travelling at 20 m/s completely crosses another train having 192 meters length travelling in same direction at 15 m/s in 1.5 minutes. In what time will they cross each other travelling in opposite direction and length of the faster train is?**

**Solution:**

Let the length of faster train be  $x$  metres.

Then, distance covered =  $x + 192$  metres.

In same direction Relative speed =  $(20 - 15)$  m/s

$$\text{Now, } (x+192)/90 = 5$$

$$\Rightarrow x = 450 - 192$$

$$\Rightarrow x = 258 \text{ metres}$$

In opposite direction Relative speed =  $(20+15) = 35$  m/s

Distance has to be covered =  $192 + 258 = 450$  metres

So the needed time =  $450/35 = 12.86$  sec

### Combined 3 Bank Officer (Cash) 2018

**01. A motorist and cyclist starts from A to B at the same time where  $AB = 18$ km. The speed of motorist is 15kmph more than the cyclist. After covering half the distance the motorist rests for 30mins and there after his speed reduces by 20%. If the motorist reaches destination B 15min earlier than that of the cyclist. Then find the speed of the cyclist.**

**Solution:**

Let, speed of cyclist =  $x$  km

So, speed of motorist =  $x + 15$  km



প্রতিদিনের চাকুরীর মার্কুলার পেতে [এখানে ক্লিক করুন](#)

প্রতি মাসের কারেন্ট অ্যাফেয়ার্স পিডিএফ [এখানে ক্লিক করুন](#)

চাকুরীর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিসিএম এর প্রয়োজনীয় পিডিএফ বই [এখানে ক্লিক করুন](#)

প্রতি সপ্তাহের চাকুরী পত্রিকা ডাউনলোড [এখানে ক্লিক করুন](#)

সকল নিয়োগ পরীক্ষার প্রশ্ন সমাধান [এখানে ক্লিক করুন](#)

**বিডিনিয়োগ.কম দেশের মেরা পিডিএফ কালেকশন**

SSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

HSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিশ্ববিদ্যালয় ভর্তির সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

সকল ধরনের **মাজেশন** ডাউনলোড [এখানে ক্লিক করুন](#)



ATQ,

$$\begin{aligned} 9/(x+15) + 1/2 + 9/\{0.8(x+15)\} &= 18/x - 1/4 \\ \Rightarrow 9/(x+15) + 45/4(x+15) - 18/x &= -1/4 - 1/2 \\ \Rightarrow (12x+60)/x(x+15) &= 1 \\ x &= 12(\text{ans}) \end{aligned}$$

**Answer: 12 km/hr**

02. A boat goes 30km upstream and 44km downstream in 10 hours. In 13 hours, it can go 40km upstream and 55km downstream. Determine the speed of boat in still water and stream.

**Solution:**

$$\begin{aligned} 30/x - y + 44/x + y &= 10 \quad \text{---1} \\ 40/x - y + 55/x + y &= 13 \quad \text{---2} \end{aligned}$$

From 1 and 2

$$\begin{aligned} x &= 11 \\ y &= 8 \end{aligned}$$

**Alternative Solution:**

Let speed upstream be  $x$  km/hr and speed downstream be  $y$  km/hr.

$$\text{1st condition, } 30/x + 44/y = 10 \dots\dots (i)$$

$$\text{2nd condition } 40/x + 55/y = 13 \dots\dots (ii)$$

$(i) \times 4 - (ii) \times 3$  we get,

$$y = 11$$

putting the value of  $y$  in (i) we get,

$$x = 5$$

so speed in still water =  $11 + 5/2 = 8$  km/hr

**Answer: 8 km/hrs**

03. A and B can do a piece of work in 30 days, while B and C can do the same work 24 days, and A and C can do it in 20 days. They work together for 10 days before B and C leave. How many days more will A take to finish the work?

**Solution:**

$$2(A+B+C) = 1/30 + 1/24 + 1/20 = 1/8$$

$$\text{So, } (A+B+C) = 1/16$$

$$\text{Work efficiency of A} = 1/16 - 1/24 = 1/48$$

ATQ,

$$10/16 + x/48 = 1$$

$$x = 18$$

So answer is 18 days

**Answer: 18 Days**

04. A solution of honey and water is 28 litres, with honey and water in ratio 4:3. To this a 21 litre honey-water solution is added that has honey to water ratio as 2:1. Again a 51 litre honey-water solution that has honey to water ratio as 9:8 is added to this. After this 10 litre of the

solution is replaced with pure honey. What is ratio of water to honey in the final mixture?

**Solution:**

$$\text{1st connotation, honey} = 28 \times 4/7 = 16L$$

$$\text{Water} = 12L$$

$$\text{2nd connotation, Honey} = 21 \times 2/3 = 14L$$

$$\text{Water} = 7L$$

$$\text{3rd connotation, honey} = 51 \times 8/17 = 27L$$

$$\text{Water} = 24L$$

$$\text{New solution} = 16 + 14 + 27 : 12 + 7 + 24 = 57 : 33$$

$$\text{After replacement} = (33 - 33 \times 10/90) // \{ (57 - 57 \times 10/90 + 10) \} = 387/613$$

**Answer: 387: 613**

05. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time is required by the first pipe is?

**Solution:**

Let, First tank needs =  $x$  hour

Second tank needs =  $y$  hours

Third tank needs =  $z$  hours

$$\text{Atq 1, } x + y = z$$

$$\text{Atq 2,}$$

$$y = x - 5$$

$$y = z + 4$$

$$x - 5 = z + 4$$

$$\Rightarrow x - z = 9$$

$$\Rightarrow x = 9 + z$$

Now

$$1/(9+z) + 1/(z+4) = 1/z$$

$$\Rightarrow z = 6.$$

Required,  $x = 9 + z = 9 + 6 = 15$  hours (answer)

**Answer: 15 hours**

### Sonali Bank Officer FF Quota-2019

1. A product is made with three components A, B, C and the ratio of the prices are 4:3:2. After 1 year price of A increased by 10%, B increased by 8% & C decreased by 5%. What is the percentage of total increase?

**Solution:**

Let,

A, B & C =  $4x, 3x, 2x$  respectively.

$$\begin{aligned} \text{New increase} &= 4x \times 110/100 + 3x \times 108/100 + 2x \times 95/100 \\ &= 4.4x + 3.24x + 1.9x \\ &= 9.54x \end{aligned}$$

$$\text{Increased} = 9.54x - (4x + 3x + 2x) = 0.54x$$

$$\text{Increase \%} = (0.54x \times 100) / 9x = 6\%$$

**Answer: 6%.**

2. A and B started a business with initial investments in the respective ratio of 18:7. After four months from the start of the business, A invested Rs.2000 more and B invested Rs.7000 more. At the end of one year, if the profit was distributed among them in the ratio of 2:1 respectively. What was the total initial investment with which A and B started the business?

**Solution:**

Let,

The initial investment of A =  $18x$

And

Initial investment of B =  $7x$

According to question,

$$\{18x \times 4 + (18x + 2000) \times 8\} / \{7x \times 4 + (7x + 7000) \times 8\} = 2/1$$

$$\text{Or, } 9x + 18x + 2000 = 7x + 14x + 14000$$

$$6x = 12000$$

$$x = 2000$$

So, Total initial investments of A and B

$$= 18x + 7x = 25x = 25 \times 2000$$

$$= 50000$$

**Answer: Rs. 50000.**

3. A river is flowing at a speed of 5 km/h in a particular direction. A man, who can swim at a speed of 20 km/h in still water, starts swimming along the direction of flow of the river from points A and reaches another point B which is at a distance of 30 km from the starting point A. On reaching point B, the man turns back and starts swimming against the direction of flow of the river and stops after reaching point A. The total time taken by the man to complete his journey is?

**Solution:**

Given,

Speed of the stream = 5 km/h

and

speed of the man in still water = 20 km/h

Speed of the man in downstream =  $20 + 5 = 25$  km/h

and

Speed of the man in upstream =  $20 - 5 = 15$  km/h

Therefore, Total time taken to complete the journey

$$\begin{aligned} &= 30/25 + 30/15 \\ &= 30 \{ (3+5)/75 \} \\ &= (30 \times 8)/75 \\ &= 3 \text{ h } 12 \text{ min} \end{aligned}$$

**Answer: 3 h 12 min.**

4. The cost of manufacturing a popular model car is made up of three items: cost of raw material, labour and overheads- in a year the cost of three items were in the ratio of 4:3:2. Next year the cost of the raw material rose by 10%, labour cost increased by 8% but overhead reduced by 5%. Then % increase in the price of the car ?

**Solution:**

Let,

the cost of material, labour and overhead =  $4x, 3x, 2x$  respectively.

$$\text{New increase} = 4x \times 110/100 + 3x \times 108/100 + 2x \times 95/100$$

$$= 4.4x + 3.24x + 1.9x$$

$$= 9.54x$$

$$\text{Increased} = 9.54x - (4x + 3x + 2x) = 0.54x$$

$$\text{Increase \%} = (0.54x \times 100) / 9x = 6\%$$

**Answer: 6%.**

5. The distance between two stations 'X and Y' is 450 km. A train L starts at 6:00 pm from X and moves towards Y at an average speed of 60 km/h. Another train M starts from Y at 5 : 20 pm and moves towards X at an average speed of 80 km/h. How far from x will the two trains meet and at what time?

**Solution:**

Let,

Two trains meet at a km from X.

$$\{ \text{Time taken by M to cover } (450 - a) \text{ km} \} - \{ \text{Time taken by L to cover } a \text{ km} \} = 40/60$$

$$\text{Or, } (450 - a)/80 - a/60 = 40/60$$

$$\text{Or, } (450 - a)/80 = 40/60 + a/60$$

$$\text{Or, } (450 - a)/8 - (a + 40)/6 = 0$$

$$\text{Or, } 3(450 - a) - 4(a + 40) = 0$$

$$\text{Or, } 7a = 1190$$

$$\text{Or, } a = 170$$

Time taken by L to cover 170 km =  $170/60$  hr = 2 hr 50 min

So, the two trains will meet at 6:00pm + 2 hr 50 min = 8:50 pm

**Answer: Required distance = 170 km and meeting time = 8:50 pm.**



6. Amit deposited some money in a bank, which pays 15% interest per annum compounded yearly. If the bank provides simple interest instead of compound interest, he receives Rs. 2400 after 2 years. Find the total Amount that he received after 2 years.

**Solution:**

Simple interest =  $pnr$

Or,  $2400 = p \times 2 \times 15/100$

Or,  $p = 8000$

Now,

Compound interest,

$A = p(1 + r/100)^n$

Or,  $A = 8000(1 + 15/100)^2$

Or,  $A = 8000 (115/100)^2$

Or,  $A = 10580$

**Answer: Rs. 10,540**

7. 12 men can complete a piece of work in 36 days. 18 women can complete the same piece of work in 60 days. 8 men and 20 women work together for 20 days. If only women were to complete the remaining piece of work in 4 days, how many women would be required?

**Solution:**

12 men can complete the work in 36 days.

So,  $12 \times 36$  men can complete the work in 1 day

Again,

18 women can complete the work in 60 days

So,  $18 \times 60$  women can complete the work in 1 day

$12 \times 36$  men =  $18 \times 60$  women

So, 2 men = 5 women

Now, 8 men + 20 women =  $(4 \times 5 + 20)$  women = 40 women

So, 18 women complete the work in 60 days

So, 40 women's 20 days work,

$= (40 \times 20) / (18 \times 60)$

$= 20/27$

So, remaining work

$= 1 - 20/27$

$= 7/27$

So,  $18 \times 60$  women do 1 work in 1 day

So, 1 woman does  $= 1/(18 \times 60)$  work in 1 day

So, 1 woman does in 4 days  $= 4/(18 \times 15)$  work

So,  $1/(18 \times 15)$  work is done in 4 days by 1 woman

So,  $7/27$  work is done in 4 days by  $= (18 \times 15 \times 7) / 27 = 70$  women

**Answer: 70 women.**

### Combined 5 Bank Officer Cash -2019

1. 60 men could complete a piece of work in 250 days. They worked together for 200 days. After that the work had to be stopped for 10 day due to bad weather. How many more men should be engaged to complete the work in time?

**Solution:**

60 men work for 200 days.

They stops for 10 day due to bad weather.

So the work is to complete in

$(250 - 200 - 10) = 40$  days in order to complete in schedule time i.e 250 days.

Let 'n' number of more man is required

$(60 \text{ men} \times 200 \text{ days}) + (60 + n) \text{ men} \times 40 \text{ days} = 60 \text{ men} \times 250 \text{ days}$

Or,  $12000 + (60 + n) \text{ men} \times 40 \text{ days} = 15000$

Or,  $(60 + n) \times 40 = 3000$

Or,  $60 + n = 75$

Or,  $n = 15$

2. The ratio of the numbers of boys and girls in a school was 5: 3. Some new boys and girls were admitted to the school, in the ratio 5:7. At this, the total number of students in the school became 1200, and the ratio of boys to girls changed to 7:5. What was the number of students in the school before new admissions?

**Solution:**

Let,

Number of boys before new admission =  $5x$

Number of girls before new admission =  $3x$

So, total number of students =  $5x + 3x = 8x$

Some new boys and girls were admitted to the school, in the ratio 5:7.

So, Number of new boys =  $5y$  and Number of girls =  $7y$

So, total number of new students =  $5y + 7y = 12y$

ATQ,

$8x + 12y = 1200$

Or,  $2x + 3y = 300$  --- (1)

Again,

$(5x + 5y) / (3x + 7y) = 7/5$

Or,  $25x + 25y = 21x + 49y$

Or,  $4x - 24y = 0$

Or,  $4x = 24y$

Or,  $x = 6y$

From (1),

$2x + 3y = 300$

Or,  $2 \times 6y + 3y = 300$

$$\text{Or, } 15y = 300$$

$$\text{Or, } y = 20$$

$$\text{So, } x = 20 \times 6 = 120$$

$$\text{Now, total number of students were } 8x = 8 \times 120 = 960$$

3. An article manufactured by a company consists of two parts A and B. In the process of manufacture of part A, 9 out of 100 are likely to be defective. Similarly, 5 out of 100 are likely to be defective in the process of manufacture of part B. What will be the probability that the assembled part will not be defective?

**Solution:**

Probability that the article will be defective

$$= 9/100 \times 95/100 + 91/100 \times 5/100 + 9/100 \times 5/100$$

$$= 171/2000 + 91/2000 + 9/2000$$

$$= 271/2000$$

Therefore, Probability that the article will be non-defective

$$= 1 - 271/2000$$

$$= 1729/2000$$

$$= 0.86$$

4. Three runners A, B and C run a race, with runner A finishing 12 m ahead of runner B and 18 m ahead of runner C, in another race of same type runner B finished 8 m ahead of runner C. Each runner travels the entire distance at a constant speed. Find the length of the race.

**Solution:**

Let,

A finishes x m which is the required distance.

ATQ,

B finishes in (x-12) m

C finishes in (x-14) m

Again,

If B finishes in x m, then C finishes in (x-8) m

So,

$$A/B = x/(x-12); A/C = x/(x-18)$$

$$\text{So, } B/C = (x-12)/(x-18) \text{---(1)}$$

$$B/C = x/(x-8) \text{---(2)}$$

From (1) & (2),

$$(x-12)/(x-18) = x/(x-8)$$

$$\text{Or, } x^2 - 18x = x^2 - 20x + 96$$

$$\text{Or, } 2x = 96$$

$$\text{Or, } x = 48$$

length of the race is 48 m.

5. 'A' began a small business with a certain amount of money. After four months from the start of the business. 'B' joined the business with an amount which was Tk 6000

less than 'A's' initial investment. 'C' joined the business after seven months from the start of business with an amount which was Tk.2000 less than A's initial investment. At the end of the year total investment repented was Tk. 142000. What will be A's share in the profit, if B received Tk.8000 as profit share?

**Solution:**

Let,

Initial investment of A be tk. x

Total investment at the end of year

$$= 12x + 8(x - 6000) + 5(x - 2000)$$

$$= 12x + 8x + 5x - 48000 - 10000$$

$$= (25x - 58000) \text{ tk}$$

ATQ,

$$25x - 58000 = 142000$$

$$\text{Or, } 25x = 142000 + 58000$$

$$\text{Or, } 25x = 200000$$

$$\text{Or, } x = 8000$$

Ratio of profit sharing for A, B and C

$$= (12 \times 8000) : (8 \times 2000) : (5 \times 6000)$$

$$= 96000 : 16000 : 30000$$

$$= 48 : 8 : 15$$

$$\text{B's share} = 8000 \text{ tk}$$

$$\text{A's share} = 8000 \times (48/8) = 48000 \text{ tk.}$$

**Translation: English to Bangla**

Natural disasters as we all know are the consequences of events triggered by natural hazards that overwhelm local response capacity and seriously affect the social and economic development of a region. There is basically no human control over the natural disaster. We cannot stop these natural disasters but what is in our hands is to be prepared for these. Also, there are a lot of ways through which we can minimize the damage caused due to these natural disasters. Traditionally, natural disasters have been seen as situations that create challenges and problems mainly of a humanitarian nature. There is no way to prevent or avert these natural disasters, though scientists do claim to have found the ways to predict these natural disasters at most of the times they have failed to predict natural disasters causing some serious destruction.

**Translation: Bangla to English**

আমাদের দেশে দারিদ্র একটি বড় সমস্যা। কিন্তু এই শোচনীয় অবস্থা যে প্রধানত আমাদের নিজেদের দ্বারাই সৃষ্ট, তা আমরা প্রায়ই বুঝতেই পারি না। অনেকেই কঠিন পরিশ্রম এবং লাভজনক ব্যবসার

দ্বারা নিজেদের অবস্থার উন্নতি সাধন করতে চেষ্টা করে না। তাছাড়া নিজেদের দুর্বস্থার জন্য তারা কেবল হা-হতাশ করে এবং ভাগ্যকে অভিসম্পাত করে। এই জড়তা ও শ্রমবিমুখতা বেড়ে ফেলতে হবে। মানুষ নিজেই নিজের ভাগ্য নির্মাতা’-এই মহান বাক্য স্মরণে রেখে দৃঢ় পদক্ষেপে জীবনপথে অগ্রসর হলে দারিদ্র ও দুঃখ দূর হবে এবং সুখ ও শান্তি আমাদের চিরসঙ্গী হবে।

### Business Letter writing in Bangla

শিল্প কারখানার বর্জ্য আপনার এলাকার জলাশয় নষ্ট করছে জানিয়ে পত্রিকায় প্রকাশের জন্য একটি আবেদন পত্র লিখুন।[ 20]

Read the following passage and answer the questions below:[20]

Plastics form an important part of synthetics - plastics are also polymers. Since most plastics can be easily molded into any shape after heating, they are used for making a variety of objects of different shapes and sizes. Plastics are poor conductors of heat which makes them suitable for making handles of cooking vessels, for use in refrigerators, and for making containers in microwave ovens.

Plastics are also poor conductors of electricity and that is why they are used as covering materials in electrical appliances, cords and wiring. Plastics are insoluble in water and, therefore, used for making bottles, buckets and other containers. Most plastics are inflammable. However, they do not corrode or rust and so mostly used in homes and laboratories.

Despite many different uses of plastics, there are environmental and health hazards associated with their disposal. This is because plastics are non-biodegradable. Accumulation of plastics is considered a serious problem because most of the methods used to dispose them result in some type of damage to the environment. Though somewhere between 500 million to one trillion plastic bags are consumed worldwide each year, most plastic wastes end up littering roadside and form ugly dumps that harbor many disease causing organisms. Plastics dumped in water bodies pose a threat to aquatic life; plastics that get buried prevent rain water from seeping into the ground. This affects the growth of plants. When plastics are burnt, they produce toxic gases and smoke.

- How do the plastics affect the growth of the plants?
- What are the hazards associated with the disposal of plastics?
- What is produced when plastics are burnt?
- What does the word synthetic denote
- What do you learn after reading the passage?

### Focus Writing in English [20]

Write an essay on “Biological Diversity”

### Focus Writing in Bangla [30]

“বিশ্বায়ন বা গ্লোবলাইজেশন” সম্পর্কে একটি প্রবন্ধ রচনা করুন।

## Combined 8 Bank SO (Canceled) -2019

### 1. Focus Writing in English [20]

Write an essay on “Positive and negative effects of WhatsApp.”

### 2. Focus Writing in Bangla [30]

“ইন্টারনেট: বিশ্বের সেতুবন্ধন” সম্পর্কে একটি প্রবন্ধ রচনা করুন।

### 3. Business Letter writing in Bangla [20]

নিত্য প্রয়োজনীয় দ্রব্যের মূল্য বৃদ্ধি রোধের জন্য সংশ্লিষ্ট কর্তৃপক্ষের দৃষ্টি আকর্ষণ করে পত্রিকায় প্রকাশের জন্য একটি আবেদন পত্র লিখুন।

### 4. Read the following passage and answer the questions below: [20]

It started 20 years ago. One day, Jane Smith, a busy mom and a loving wife, went shopping for new clothes. After a few hours of searching, she came home exhausted and disappointed. In the mid-80s, few manufacturers made clothes for women over thirty “Thousands of women in England have the same problem, and I will help them,” thought Mrs. Smith. With very little money, no connections in the fashion world and a husband who thought that her idea was crazy, the ambitious woman decided to start up her own business.

Jane designed her first collection of twenty clothing items, bought suitable material and sewing machines, and hired experienced tailors. The Smiths’ balcony turned into a workshop. When the collection was ready Jane offered it to a famous chain of stores.

To her surprise, they bought the whole collection at once. When they asked her about the name of her company, Jane looked at her husband, smiled and said: “Crazy Mom”. The collection was sold in a very short time - women liked Jane’s models. In a month the manager of the chain ordered more clothes from “Crazy Mom” and Jane had to hire more people and find a bigger place for the workshop. The next step was opening her own shop at the central train station in Manchester.

Now “Crazy Mom” has 50 boutiques all over the world. Mr. Smith left his job as an engineer and became head of the company. Their four children also work in the company

and, according to Jane, this is what makes the business so successful.

- (a) What difficulties did Jane face when starting up her business?  
 (b) What did Mrs. Smith do in order to start her business?  
 (c) Why did Jane decide to call her collection "Crazy Mom"?  
 (d) What did Jane do when the manager ordered more clothes?  
 (e) What fact proves that "Crazy Mom" is a successful company?

**5. Three partners shared the profit in the ratio 5:7:8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments? [14]**

**Solution:**

Let their investments be  $x$  for 14 months,  $y$  for 8 months and  $z$  for 7 months respectively.

Then,  $14x : 8y : 7z = 5 : 7 : 8$ .

Now,  $14x/8y = 5/7$

$$\Rightarrow 98x = 40y$$

$$\Rightarrow y = 49x/20$$

And,

$$14x/7z = 5/8$$

$$\Rightarrow 112x = 35z$$

$$\Rightarrow z = 112x/35$$

$$\Rightarrow z = 16x/5$$

So  $x : y : z = x : 49x/20 : 16x/5$  ---- (Multiple by 20)

$$\Rightarrow x : y : z = 20 : 49 : 64.$$

**6. Two pipes A and B can fill a tank in 20 hours and 30 hours respectively. Both the pipes are opened to fill the tank but when the tank is 1/3 full, a leak develops in the tank through which 1/3 water supplied by both the pipes goes out. How much time will the tank take to be full?[14]**

**Solution:**

Efficiency of first pipe =  $100/20 = 5\%$  per hour.

Efficiency of second Pipe =  $100/30 = 3.33\%$  per hour.

Efficiency of both pipe together =  $5 + 3.33 = 8.33\%$  per hour.

1/3 i.e. 33.33% tank be filled by these two pipes in =  $33.33/8.33 = 4$  hours.

Now, tank is empty and it need to be filled from zero.

So Time taken to Fill the empty tank =  $100/8.33 = 12$  hours.

So, Total time taken to filled the tank =  $4 + 12 = 16$  hours.

**7. A finance company declares that, at a certain compound interest rate, a sum of money deposited by anyone will**

**become 8 times in 3 years. If the same amount is deposited at the same compound rate of interest, then in how many years will it become 16 times? [14]**

**Solution:**

Let,

Principal = P

Rate of interest = R

Time =  $n = ?$

ATQ,

$$P(1 + R/100)^3 = 8P$$

$$\text{Or, } (1 + R/100)^3 = 8$$

$$\text{Or, } 1 + R/100 = 2$$

$$\text{Or, } R/100 = 1$$

Again,

ATQ,

$$P(1 + R/100)^n = 16P$$

$$\text{Or, } (1 + 1)^n = 16$$

$$\text{Or, } 2^n = 2^4$$

$$\text{Or, } n = 4$$

**8. An engineer undertake a project to build a road 15 km long in 300 days and employs 45 men for the purpose.**

**After 100 days, he finds 2.5 km of the road has been completed. Find the number of extra men he must employ to finish the work in time. [14]**

**Solution:**

Let  $x$  be the total men required to finish the task in next 200 days

2.5 km done hence remaining is 12.5 km

Also, work has to be completed in next 200 days ( $300 - 100 = 200$ )

We know that, proportion of men to distance is direct proportion

and, proportion of men to days is inverse proportion

Hence,  $X/45 = (12.5 * 100) / (2.5 * 200)$

thus,  $X = 112.5$  that is approximately 113

Thus, more men needed to finish the task =  $113 - 45 = 68$

**9. A bucket contains a mixture of two liquids A and B in the proportion 7:5. If 9 liters of mixture is replaced by 9 liters of liquid B, then the ratio of the two liquids becomes 7:9. How much of the liquid A was there in the bucket? [14]**

**Solution:**

Suppose the can initially contains  $7x$  and  $5x$  of mixtures A and B respectively.

Quantity of A in mixture left =  $(7x - 7/12 * 9)$  litres  
 =  $(7x - 21/4)$  litres.

Quantity of B in mixture left =  $(5x - 5/12 * 9)$  litres

$$= (5x - 15/4) \text{ litres.}$$

$$\text{Since } (7x - 21/4) / (5x - 15/4) + 9 = 7/9$$

$$= 28x - 21 / 20x + 21 = 7/9$$

$$\Rightarrow 252x - 189 = 140x + 147$$

$$\Rightarrow 112x = 336$$

$$\Rightarrow x = 3$$

So, can contained 21 litres of A.

#### 10. Combined 8 Bank Senior Officer Written Translation:

##### Bangla to English [20]

আধুনিক সময়ে বিজ্ঞাপন একটি বিশেষ ধরনের কাজে পরিনত হয়েছে। আজকের ব্যবসা-প্রধান বিশ্বে, যোগান চাহিদার চেয়ে অনেক বেশি। বর্তমানে নিজেদের নির্দিষ্ট পণ্যটিকে কেনায় ভোক্তাকে প্ররোচিত করার জন্য একই পণ্যের বিভিন্ন উৎপাদনকারী প্রতিষ্ঠানের মাঝে ব্যাপক প্রতিযোগিতা লক্ষ্য করা যায়। ভোক্তাকে সবসময় তাদের পণ্যের নাম ও গুণগত মান স্মরণ করিয়ে দিতে হয়। তারা বিজ্ঞাপনের মাধ্যমে এ কাজটি করে থাকে। উৎপাদনকারী পত্রিকায় বিজ্ঞাপন প্রদান ও পোস্টারের মাধ্যমে প্রচারকার্য চালিয়ে থাকে। প্রক্রিয়াজাতকারীরা বিজ্ঞাপন বাবদ প্রচুর অর্থ ব্যয় করে থাকেন। আমরা একটি নির্দিষ্ট পণ্য ক্রয় করে থাকি, কারণ আমরা মনে করি সেটি সেরা।

#### 11. Combined 8 Bank Senior Officer Written Translation:

##### English to Bangla [20]

The society has been dramatically changed with the evolution of technology. Before the advent of modern day technology, life was burdensome and everyday chores consumed too much of our time. Immense opportunities are being provided by technologies which play an important role in human life. The access to education, medicine, industry, transportation etc. has been simplified due to modern day technology. Due to the convenience and efficiency provided by technology, our lives have improved significantly. There used to be a time when executing a simple task like doing laundry would take most of the day. Thanks to modern technology, a lot of burden has been lifted up from our shoulders and we have more time and energy to do what we want to.

#### Combined 8 Bank Senior officer - 2019

01. A rectangular plot has a concrete path running in the middle of the plot parallel to the breadth of the plot. The rest of the plot is used as a lawn, which has an area of  $240\text{m}^2$ . If the width of the path is 3m and the length of the plot is greater than its breadth by 2m, what is the area of the rectangular plot? [14]

**Solution:**

Let, the width of plot = x metre

So, Length = (x + 2) metre

Area of concrete path =  $3x$  sq. metre

ATQ,

$$x(x + 2) - 3x = 240$$

$$\text{Or, } x^2 + 2x - 3x = 240$$

$$\text{Or, } x^2 - x - 240 = 0$$

$$\text{Or, } x^2 - 16x + 15x - 240 = 0$$

$$\text{Or, } x(x - 16) + 15(x - 16) = 0$$

$$\text{Or, } (x - 16)(x + 15) = 0$$

$$\text{Or, } x = 16 \text{ because } x \neq -15$$

So, Length =  $16 + 2 = 18$  metre

So, Area of the plot =  $(18 \times 16)$  sq. metre =  $288$  sq. metre.

02. A pipe can fill a tank in 0.9 hours and another pipe can empty in 0.7 hours. If tank is completely filled and both pipes are opened simultaneously then 450 liters of water is removed from the tank in 2.5 hours. What is the capacity of the tank? [14]

**Solution:**

Let,

The capacity of the tank be x litre

A can fill in 1 hour =  $x/0.9$  litre

So, A can fill in 2.5 hour =  $2.5x/0.9$  litre

Again,

B can empty in 1 hour =  $x/0.7$  litre

So, B can empty in 2.5 hour =  $2.5x/0.7$  litre

ATQ,

$$(2.5x/0.7) - (2.5x/0.9) = 450$$

$$\text{Or, } x/7 - x/9 = 450/25$$

$$\text{Or, } 2x/63 = 18$$

$$\text{Or, } x = (18 \times 63)/2 = 567$$

So, the capacity of the tank = 567 litre

03. A sum of Tk.3240 was fixed to complete a work. 54 workers completed the work in 8 days and the sum was divided equally among the workers. If the work was to be completed in 3 days then how much less money each worker would receive compared to when the work was completed in 8 days? [14]

**Solution:**

To finish the work in 8 days needed 54 workers

To finish the work in 1 day needed  $(54 \times 8)$  workers

To finish the work in 3 days needed  $(54 \times 8)/3$  workers = 144 workers

Now, in case of 8 days,

Each worker gets =  $3240/54$  tk. = 60 tk.



In case of 3 days,

Each worker gets =  $3240/144$  tk. = 22.5 tk.

So, less money each worker would receive =  $(60-22.5)$ tk. = 37.5 tk.

**04. Two trains running at the rate of 75 km and 60 km an hour respectively on parallel rails in opposite directions are observed to pass each other in 8 seconds and when they are running in the same direction at the same rates as before, a person sitting in the faster train observes that he passes the other in  $31 \frac{1}{2}$  seconds. Find the lengths of the trains. [14]**

**Solution:**

Moving in opposite direction:

Relative speed of two trains =  $(75 + 60)$  km/hr = 135

km/hr =  $(135 \times \frac{5}{18})$  m/s =  $\frac{75}{2}$  m/s

Length of the both trains =  $(\frac{75}{2} \times 8)$  meters = 300 meters

When moving in the same direction,

Relative speed of two trains =  $(75 - 60)$  km/hr = 15 km/hr

=  $(15 \times \frac{5}{18})$  m/s =  $\frac{25}{6}$  m/s

So, Length of the slower train =  $(\frac{25}{6} \times 31.5)$  meters =

131.25 meters

Thus, length of the faster train =  $300 - 131.25 = 168.75$

meters

Ans: 131.25 meters and 168.75 meters.

**05. A, B and C can do a piece of work in 12, 18 and 24 days respectively. They all begin together. A work continuously till it is finished, B leaves the work 2 days before its completion and C leaves the work 4 days before its completion. In what approximate time is the work finished? [14]**

**Solution:**

Let, the work needs x days to be finished.

So,

A works x days.

B works (x-2) days.

C works (x-4) days.

Now,

A works in x days =  $\frac{x}{12}$  part

B works in (x-2) days =  $\frac{(x-2)}{18}$  part

C works in (x-4) days =  $\frac{(x-4)}{24}$  part

ATQ,

$\frac{x}{12} + \frac{(x-2)}{18} + \frac{(x-4)}{24} = 1$

Or,  $(6x+4x-8+3x-12)/72 = 1$

Or,  $(13x-20)/72 = 1$

Or,  $13x = 72+20$

Or,  $13x = 92$

Or,  $x = \frac{92}{13} = 7 \frac{1}{13} = 8$  (Approx)

So, the work finished approximately in 8 days.

**06. Read the following passage and answer the questions below: [20]**

Management is a set of processes that can keep a complicated system of people and technology running smoothly. The most central characteristics of management include scheduling, accounting, organizing, staffing, controlling, and problem-solving. Leadership is a set of process that generates organizations in the first place or acclimatizes them to expressively changing situations. Leadership outlines what the impending should look like, brings into line people with that vision, and inspires them to make it happen despite the obstacles. This distinction is absolutely crucial for our purposes here: Successful transformation is 70 to 90 per cent leadership and only 10 to 30 per cent management. Yet for historic motives, numerous organizations today don't have much headship. And almost everyone thinks about the problems here as one of managing change. For most of this century, as we created thousands and thousands of large organizations for the first time in human history, we didn't have enough good managers to keep all those bureaucracies functioning. Thus many companies and academies developed management programs, and hundreds and thousands of people were stimulated to learn managing on the job. And they did. But people little about leadership. To some degree, management was emphasized because it's easier to teach than leadership. But even more so, supervision was the chief item on the twentieth-century outline because that's what was needed. For every entrepreneur or business builder who was a leader, we needed hundreds of managers to run their ever growing enterprises. Regrettably, for us today, this importance on management has often been longstanding in corporate cultures that dishearten workers from learning how to lead. Ironically, past success is usually the key ingredient in producing this outcome. The condition, as I have perceived it on many cases, goes like this: victory creates some degree of market supremacy, which in turn produces much progress. After a while keeping the ever larger organizations under control becomes the primary challenge. So, attention turns inward, and managerial competencies are nurtured. With a robust importance on supervision but not on headship, administration and an inward focus take over. But with

continued success, the result mostly of market dominance, the problem often goes unaddressed and an unhealthy arrogance begins to evolve. All of these features then make any renovation struggle much more problematic. Arrogant managers can over evaluate their current performance and competitive position, listen poorly, and learn slowly.

Inwardly focused employees can have difficulty seeing the very forces that present threats and opportunities. Bureaucratic cultures smother those who want to respond to shifting conditions. And the lack of leadership leaves no room inside these organizations to break out of the morass.

- (a) Why, according to the author, is a distinction between management and leadership crucial?
- (b) Why did companies and universities develop programs to prepare managers in such a large number? Explain.
- (c) How has the author defined management? Explain.
- (d) Why does the attention of large organizations turn inward?
- (e) Why people were taught little about leadership in management programs? Explain.

#### 07. Translation English to Bangla [20]:

Patriotism is a quality that inspires a man to do everything just and fair for well-being and betterment of the country. It is the quality that impels a man to sacrifice his own interest, comfort, pleasure and even his life. Patriotic zeal makes a man dutiful. He cannot sit idle. He is energetic and enthusiastic to work for the country. He obeys the laws, pays taxes and thinks for the betterment of the country. Patriotism is a quality that teaches a man fellow-feeling, fraternity, love and sympathy for the countrymen. A patriotic man gets pleasure in removing the suffering and sorrow of his fellowmen. He devotes his time and energy to develop the country, its culture and civilization, its economic and political systems. On the contrary, a man devoid of patriotic zeal engages all his time in achieving his mean end.

#### 08. Translation Bangla to English [20]:

মানবাধিকার হচ্ছে সেসব অধিকার যা জাতীয়তা, লিঙ্গ, বর্ণ, ধর্ম, ভাষা অথবা অন্য যে কোন অবস্থান নির্বিশেষে মানুষের নিকট অন্তর্নিহিত। বস্তুতঃ মানবাধিকার বলতে কিছু নৈতিক রীতিনীতি বা নিয়ম যা মানব আচরণের নির্দিষ্ট কিছু মানদণ্ডকে বােঝায়। আন্তর্জাতিক আইনে মানবাধিকারকে আইনগত অধিকার হিসেবে রক্ষা করা হয়। এই পৃথিবীতে প্রতিটি মানুষের অন্ন, বস্ত্র, বাসস্থান, শিক্ষা এবং স্বাস্থ্যসেবা পাওয়ার অধিকার রয়েছে। এই

অধিকারগুলোকে মৌলিক মানবাধিকার হিসেবে গণ্য করা হয়। আমাদের দেশের বহু মানুষ মৌলিক মানবাধিকারসমূহ থেকে বঞ্চিত। আমাদের দরিদ্র শিশুরা খাদ্য, স্বাস্থ্যসেবা ও শিক্ষা থেকে বঞ্চিত। অনেক পথশিশু রয়েছে যারা আশ্রয়হীন। এইসব ছােটছােট বাচ্চাদেরকে বেঁচে থাকার জন্য অর্থ উপার্জন করতে হয়। এ ধরনের পরিস্থিতি শিশুশ্রম বৃদ্ধি করে।

#### 09. Business Letter writing in Bangla [20]

আপনার গ্রামে আপনি একটি আধুনিক তাঁতশিল্প স্থাপনে আগ্রহী। ঐ গ্রামে তাঁতশিল্প স্থাপনের উপযুক্ত কারন উল্লেখ করে সরকারি অনুমোদন লাভের জন্য শিল্প সচিবের কাছে একটি আবেদন লিখুন।

#### 10. Focus Writing in English [20]

Write an essay on "Modern Technology and Globalization".

#### 11. Focus Writing in Bangla [30]

"তথ্যপ্রযুক্তি ও বাংলাদেশের ব্যাংকিং ব্যবস্থা সম্পর্কে একটি প্রবন্ধ রচনা করুন।"

### Janata Bank Senior Officer 2018

01. পদ্মা সেতু প্রকল্পের বাস্তবায়ন বাংলাদেশের আর্থ -সামাজিক উন্নয়নে কি ধরনের ভূমিকা রাখবে বলে তুমি মনে কর? [30]

02. What are the current challenges of the banking sector in Bangladesh? Give your recommendations how to reduce non-performing loans. [20]

#### 03. Translation Bangla to English [20]:

বৃক্ষ শুধু প্রকৃতির সৌন্দর্য নয়, তা মানুষের জীবনের অপরিহার্য অংশ। জন্ম থেকে মৃত্যু পর্যন্ত মানুষের জীবনে বৃক্ষের ভূমিকা এত অপরিহার্য যে বৃক্ষহীন পৃথিবীতে প্রাণের অস্তিত্বই কল্পনা করা যায় না। দেশের অর্থনীতিতে যেমন বনাঞ্চলের ভূমিকা আছে, তেমনি আবহাওয়া ও জলবায়ুসহ প্রাকৃতিক পরিবেশের ভারসাম্য রক্ষায় বনজ সম্পদের ভূমিকা অত্যন্ত গুরুত্বপূর্ণ। তাই পরিবেশগত ভারসাম্যের জন্য চাই বৃক্ষরোপণ। প্রাকৃতিক বিপর্যয়ের কবল থেকে দেশকে রক্ষা করতে জনগনকে সচেতন ও সম্পৃক্ত করে দেশে ব্যাপক বৃক্ষরোপণের প্রয়োজন হয়ে পড়েছে। ভূ-বিজ্ঞানীদের মতে অনাবৃষ্টির কারণে দেশের ভূ-গর্ভস্থ পানির স্তর দিনের পর দিন দ্রুত নিচে নেমে যাচ্ছে। এ বিপর্যয় ও পর্যাণ্ড বনভূমি না থাকারই ফলাফল। সাধারণ জনগনকে যদি বিপন্ন পরিবেশের ভয়াবহতা সম্পর্কে অবহিত করা এবং বৃক্ষরোপণে উদ্বুদ্ধ করা যায় তাহলে অনেকেই বনায়নের কাজে এগিয়ে আসবেন।

#### 04. Translation English to Bangla [20]:

Shortcomings in financial system regulation and supervision regimes are now under intense scrutiny everywhere, following the global financial turmoil that exacted heavy tolls in wealth destruction and recession, with particular

severity in the mature advanced economics. Ironically, it was the placid stability of the preceding several years that lulled institutions, markets and regulators into complacency and inaction about the mounting global imbalances and the inordinate risk build-ups in the financial system eventually precipitating institutional failures, market freeze-ups and severe credit crunch. The gross disregard of basic cautions in risk-taking in large globally active financial institutions was prompted by quest of quick private gains for small inner circles in top managements and boards, imperiling longer term viability of the institutions and hurting interests of general shareholders and of broader citizenry as stakeholders in the financial system.

**05. You are planning to set up a food processing industry in Rangamati area. Write a letter to the local manager of a bank highlighting the feasibility of the project and requesting him to finance it. [20]**

**06. Comprehension [20]**

Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase; it is the busiest man who has time to spare. Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes. all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

- What happens when the time to be spent on some work increases?
- Explain the sentence: Work expands so as to fill the time available for its completion
- Who is the person likely to take more time to do a work?
- What is the total time spent by the elderly lady in writing a postcard?
- What does the expression 'pillar box' stand for?

**07.a) Mr. Karim gave 40% of the money he had, to his wife. He also gave 20% of the remaining amount to each of his three sons. Half of the amount now left was spent on miscellaneous items and the remaining amount of Tk**

**12,000/- was deposited in the bank. How much money did Mr. Karim have initially? [25]**

**Solution:**

Let,

Initial amount = x tk

Given to wife = 40% of x =  $(40/100) \times x = 2x/5$

Remaining amount =  $(x - 2x/5) = 3x/5$

His 3 sons get 20% of the remaining amount,

=  $3 \times (20\% \text{ of } 3x/5)$

=  $3 \times (20/100 \times 3x/5)$

=  $9x/25$

Remaining amount =  $(3x/5 - 9x/25) = 6x/25$

After spending on miscellaneous items, remaining amount

=  $(1/2 \times 6x/25) = 3x/25$

ATQ,

$3x/25 = 12000$

Or,  $x = (12000 \times 25)/3$

Or,  $x = 100000$

**07.b) A dealer buys dry fruit at the rate of Tk 100/-, Tk 80/- and Tk 60/- per kg. He bought them in the ratio 12:15:20 by weight. He in total gets 20% profit by selling the first two and at last he finds he has no gain no loss in selling the whole quantity which he had. What was the percentage of loss he suffered for the third quantity? [25]**

**Solution:**

Let,

Quantity of fruit = 12x, 15x and 20x

Total cost

=  $(100 \times 12x + 80 \times 15x + 60 \times 20x)$  tk

=  $(1200x + 1200x + 1200x)$  tk

=  $3600x$  tk

At 20% profit on 1st two quantity,

Selling price =  $(120/100) \times (1200x + 1200x) =$

$(120/100) \times 2400x = 2880x$  tk

Selling price of 3rd quantity =  $(3600x - 2880x) = 720x$  tk

Loss incurred =  $1200x - 720x = 480x$  tk

Percentage of loss he suffered for the third quantity

=  $(480x/1200x) \times 100 = 40\%$

**07.c) In a business A invests Tk 600/- more than B. The capital of B remained invested for 7 1/2 months, while the capital of A remained invested for 2 more months. If the total profit be Tk 620/- and B gets Tk 140/- less than what A gets, then what will be the amount of A's capital? [20]**

**Solution:**

Let,

A invests = x tk.

So, B invests =  $(x-600)$  tk

A's total investment =  $x \times 9(1/2) = 19x/2$

B's total investment =  $(x-600) \times 7(1/2) = 15/2(x-600)$

Ratio of investment =  $19x/2 : 15/2(x-600) = 19x : (15x-9000)$

Total investment =  $19x + (15x-9000) = 34x - 9000$

ATQ,

$620 \times \{19x/(34x-9000)\} - 620 \times \{(15x-9000)/(34x-9000)\} = 140$

Or,  $620\{19x/(34x-9000) - (15x-9000)/(34x-9000)\} = 140$

Or,  $31\{(19x - 15x + 9000)/(34x - 9000)\} = 7$

Or,  $(4x+9000)/(34x-9000) = 7/31$

Or,  $238x - 63000 = 124x + 279000$

Or,  $114x = 342000$

Or,  $x = 3000$

### Combined 4 Bank Officer - 2019

1. 6 men can complete a piece of work in 12 days. 8 women can complete the same piece of work in 18 days whereas 18 children can complete the piece of work in 10 days. 4 men, 12 women and 20 children work together for 2 days. If only men were to complete the remaining work in 1 day, how many men would be required totally? [14]

**Solution:**

1 man will complete the work in =  $6 \times 12 = 72$  days

1 woman will complete the work in =  $8 \times 18 = 144$  days

1 child will complete the work in =  $18 \times 10 = 180$  days

4 men + 12 women + 20 children's 2 days' work

=  $2(4/72 + 12/144 + 20/180)$

=  $2(1/18 + 1/12 + 1/9)$

=  $2(2+3+4)/36 = 12$

∴ Remaining work = 12

∴ Required number of men

=  $72 \times 1/2 = 36$

Ans: 36

2. First bag contains 4 red and 3 black balls. Second bag contains 2 red and 4 black balls. One bag is selected at random. From the selected bag, one ball is drawn. Find the probability that the ball drawn is red. [14]

**Solution:**

Probability that the first bag is chosen and a red ball is

drawn =  $1/2 \times 4/(4+3) = 2/7$

Probability that the second bag is chosen and a red ball is

drawn =  $1/2 \times 2/(2+4) = 1/6$

Required probability =  $2/7 + 1/6 = (12+7)/42 = 19/42$ .

Ans:  $19/42$

3. A cow was standing on a bridge, 5m away from the middle of the bridge. A train was coming towards the bridge from the ends nearest to the cow. Seeing this, cow ran towards the train and managed to escape when the train was 2m away from the bridge. If it had run in the opposite direction, it would hit by the train 2m before the end of the bridge. What is the length of the bridge in meters assuming the speed of the train is 4 times that of the cow? [14]

**Solution:**

Let,

The distance of the cow from the nearest end of the bridge is =  $x$  meters.

So, one half of the length of the bridge is =  $x+5$  meters

So, the length of the bridge is =  $2(x+5) = 2x+10$  meters.

So, the distance of the cow from the far end of the bridge

is =  $2x+10 - x = x+10$  meters.

Suppose,

the cow covered the  $x$  meters distance in  $y$  seconds.

So, the train covered in  $y$  seconds =  $4x$  meters.

So, when the cow first saw the train, the train was  $4x+2$  meters away from the bridge.

According to the question,

By the time the cow covered the distance of  $(x+10 - 2) = x+8$  meters, the train covered a

distance of  $(4x+2 + 2x+10-2) = 6x+10$  meters.

[here,  $x+10$  is the distance of the cow from the far end.

when it was hit by the train, it could

cover  $x+10 - 2$  meters.  $4x+2$  is the distance covered by the train to reach at the near end of the

bridge and  $2x+10-2$  is the distance covered by the train

from the near end of the bridge to hit the

cow]

So,

$4(x+8) = 6x+10$

$4x+32 = 6x+10$

$2x = 22$

$x = 11$

So, the length of the bridge =  $2x+10 = 2 \times 11 + 10 = 32$  meters.

Ans: 32

4. A man went downstream for 28 km in a motor boat and immediately returned. It took the man twice as long to

make the return trip. If the speed of the river flow were twice as high, the trip downstream and back would take 672 minutes. Find the speed of the boat in still water and the speed of the river flow. [14]

**Solution:**

Suppose, the speed of the boat in still water is  $x$  kmph and the speed of the river flow is  $y$  kmph.

According to the question,

$$28/(x-y) = 2 \times 28/(x+y)$$

$$2x-2y = x+y$$

$$x = 3y.$$

Again,

$$28/(x+2y) + 28/(x-2y) = 672/60$$

$$1/(3y+2y) + 1/(3y-2y) = 2/5$$

$$1/5y + 1/y = 2/5$$

$$(1+5)/5y = 2/5$$

$$y = 3$$

$$x = 3 \times 3 = 9$$

Ans: 9 km/h 3 km/h

5. A, B and C started a business by investing TK24000, TK32000 and TK18000 respectively. A and B are active partners and get 15% and 12% of total profit and remaining profit is to be distributed among them in the ratio of their investment. If C got total TK65700 as profit, what was the total amount of profit? [14]

**Solution:**

Remaining profit =  $(100 - 15 - 12)\%$  or 73% of total profit.

Ratio of remaining profit share,

$$A : B : C = 24000 : 32000 : 18000 = 12 : 16 : 9$$

$$C's \text{ profit share} = (73\% \text{ of total profit}) \times 9/(12+16+9) = (657/37)\% \text{ of total profit.}$$

According to the question,

$$(657/37)\% \text{ of total profit} = 65700 \text{ TK}$$

$$1\% \text{ of total profit} = 65700 \times 37/657 = 3700 \text{ TK}$$

$$100\% \text{ of total profit} = 3700 \times 100 = 370000 \text{ TK}$$

Ans: 370000 Tk.

**Read the following passage and answer the questions below: [20]**

Mother Teresa passed away on 5 December 1997. People all over the world mourned her passing because she was such an enormous inspiration. Even after her death, there are people everywhere continuing the work that Mother Teresa had started years ago. Mother Teresa was born in Albania in 1910. Her real name was Agnes. From a young age, her parents taught her and her siblings the importance of being charitable. Her mother taught her by example, often

welcoming the poor or sick into their home, or going out to help them. Mother Teresa was also taught the importance of religion. As a child, she enjoyed going to church, even joining the choir and learning how to play a musical instrument called the mandolin.

When Mother Teresa was twelve years old, she had the desire to dedicate her life to serve God. However, being so young, she was not yet sure of what to do. After all, most children of her age were only concerned with their school work and their friends. Thus, Mother Teresa did not act at once. Instead, she waited until she was eighteen years old to decide that she wanted to be a missionary in India. Before going to India, however, she had to undergo training first—learning about being a nun and learning to speak English. Even after reaching India in 1929, Mother Teresa continued her training. By then, she had taken on the name of Teresa

In India, Mother Teresa had the first glimpse of the poverty of the people around her. She started off as a teacher and the young children loved her for her kindness and patience. She even took care of those who were sick. Soon, Mother Teresa felt that she had to do more. What she really wanted to do was to care for the poorest of the poor people who were... by society. She understood that to help them, she had to experience their life. She was willing to sacrifice all that she had to live among them. She ate only rice because that was all the poor could afford. She even went for medical training so that she would know how to help the sick.

All her life, Mother Teresa helped these people out of love and compassion for them. People like Mother Teresa are few and far between.

- What do you understand by people 'mourned her passing'? Why are people still continuing Mother Teresa's work after her death?
- In what way did Mother Teresa's mother teach her by example?
- Referring to paragraph 3, give evidence that Mother Teresa did not know English initially. Give two qualities of Mother Teresa that made her well-loved.
- What motivated Mother Teresa to help those who were extremely poor?
- What did the writer mean when he wrote that people like Mother Teresa are "few and far between" (last paragraph)?



**07. Translation: Bangla to English [20]**

নারী-পুরুষের সম-অংশদ্বারিত্বের ভিত্তিতে বাংলাদেশের সার্বিক উন্নয়কে ত্বরান্বিত করা যেতে পারে। সৃষ্টির দিক দিয়ে, শিক্ষার দিক দিয়ে উভয়ের মাঝে কোন পার্থক্য বা বৈষম্য নেই। সর্বক্ষেত্রে নারী আজ ঈর্ষণীয় সাফল্যের স্বাক্ষর রাখতে সক্ষম হয়েছে। কাজেই সামাজিক, অর্থনৈতিক, রাজনৈতিক ও প্রশাসনিক উন্নয়নে নারী সহায়ক ভূমিকা রাখতে পারে। নারী আজ তার মেধা ও কর্মদক্ষতার বলে উন্নত, উন্নয়নশীল এবং অনুন্নত দেশের বিভিন্ন শীর্ষস্থানীয় পদে অধিষ্ঠিত। তাই সার্বিক উন্নয়নের মূল শ্রোতধারায় নারীরা সম্পূর্ণতা একান্তই বাঞ্ছনীয়। শিক্ষা, স্বাস্থ্য, প্রশিক্ষণ, কারিগরি শিক্ষা, সম্পদ ও বাজার ব্যবস্থাপনায় নারীর পূর্ণ ও সমান সুযোগ নিশ্চিত করতে পারলে উন্নয়ন কর্মকাণ্ডের গতিশীলতা বৃদ্ধি পাবে। অবশ্য বাংলাদেশ সরকার সার্বিক উন্নয়ন কর্মকাণ্ডে নারীর সম্পূর্ণতা নিশ্চিতকরণের লক্ষ্যে সিদ্ধান্ত গ্রহণ করেছে।

**08. Translation: English to Bangla [20]**

Tsunamis are not as common as other weather related disasters, but they can cause significant damage. The word tsunami comes from Japanese word meaning "long Harbor wave." Today, scientists use the term to define seismic sea waves generated by undersea earthquakes or undersea landslides and volcanic eruptions. Most tsunamis occur

along the Ring of Fire, a wave of volcanic and earthquake activity that encircles the Pacific Ocean. The Hawaiian Islands and Alaska areas are common for this type of disaster. Tsunami waves have long lengths and travel very fast in deep water. Upon reaching the shore, the speed of the wave decreases but the height increase dramatically causing massive damage to coastlines. The Tsunami Warning System has helped in warning people of these disasters, but more research and technology is needed to improve the predictions of this natural disaster.

**09. Business Letter Writing in Bangla [20]**

যোগাযোগ মন্ত্রণালয়ের বরাবরে সড়ক দুর্ঘটনার কারণে সম্পর্কে একটি প্রতিবেদন প্রস্তুত করুন।

**10. Focus Writing in English [20]**

Write an essay on "The Impact of Media and Technology on Families."

**11. Focus Writing in Bangla [30]**

"বাংলাদেশের ভূমিকম্পঃ বিপর্যয় ও ব্যবস্থাপনা" সম্পর্কে একটি প্রবন্ধ রচনা করুন।

এরকম আরো ফাইল পেতে আমাদের সাথেই থাকুন।

[Job Information For All Students \(Bcs & Bank\)](http://www.bdnuyog.com)



প্রতিদিনের চাকুরীর মার্কুলার পেতে [এখানে ক্লিক করুন](#)

প্রতি মাসের কারেন্ট অ্যাফেয়ার্স পিডিএফ [এখানে ক্লিক করুন](#)

চাকুরীর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিসিএম এর প্রয়োজনীয় পিডিএফ বই [এখানে ক্লিক করুন](#)

প্রতি সপ্তাহের চাকুরী পত্রিকা ডাউনলোড [এখানে ক্লিক করুন](#)

সকল নিয়োগ পরীক্ষার প্রশ্ন সমাধান [এখানে ক্লিক করুন](#)

**বিডিনিয়োগ.কম দেশের মেরা পিডিএফ কালেকশন**

SSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

HSC এর প্রয়োজনীয় সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

বিশ্ববিদ্যালয় ভর্তির সকল পিডিএফ বই [এখানে ক্লিক করুন](#)

সকল ধরনের **মাজেশন** ডাউনলোড [এখানে ক্লিক করুন](#)

