

## Admission test 2013 - 2014

1. 'শরবী' শব্দের অর্থ কি?  
ক) ফুল                      খ) বাগান                      গ) পুকুর                      ঘ) শিকারি
2. "বজ্রতায় 'রবিবার থেকে পরীক্ষা শুরু' এখানে 'রবিবার' কোন কারক?  
ক. অপাদান কারক                      খ. অধিকরণ কারক                      গ. করণ কারক                      ঘ. কর্ম কারক
3. 'গাছপাথর' বাগধরাটির অর্থ কি?  
ক) হিসাবনিকাশ                      খ) অপটু                      গ) কাল্পনিক জায়গা                      ঘ) নির্লজ্জ
4. নিচের কোন বানানটি সঠিক?  
ক) মরীচীতা                      খ) মরীচিকা                      গ) মরিচিকা                      ঘ) মরিচীকা
5. 'সুন্দর' শব্দের সমার্থক নয় কোনটি?  
ক) ধনিকা                      খ) ললিত                      গ) অনুপম                      ঘ) সুরম্য
6. Turn into the indirect form of speech – mother said to him, "don't run in the sun"  
a) Mother said told him not run in the sun  
b) Mother asked him do not run in the sun  
c) Mother requested him not to run in the sun  
d) Mother forbade him to run in the sun  
নিষেধ বোঝাতে indirect form of speech এ forbade বসাতে হয়।
7. The medicine should \_\_\_ his thirst  
a) assuage                      b) allay                      c) allure                      d) procure  
Allay মানে নিবারন।
8. '(i) Having lived here (ii) for seven years, my friend is used to (iii) spoke English with (iv) all her classmates' – the incorrect part of the sentence  
a) i                      b) ii                      c) iii                      d) iv  
used to এর পর speaking বসবে।
9. The meaning of 'ORATOR' is-  
a) politician                      b) speaker                      c) official                      d) certificate  
orator মানে বক্তা।
10. The intellectual can no longer be said to live \_\_\_ the margins of society  
a) against                      b) beyond                      c) inside                      d) before
11. "he offered me tea but denied it" – select the best affirmative for the underlined word  
a) refute                      b) refuted                      c) neglected                      d) declined
12. Which of the following sentence is correct?  
a) come back in an hour time  
b) come back in one hour about



Dream's

22. Turn into indirect form of speech – “How did you do that?” they said Edison

- a) they asked Edison how he had done that
- b) they asked Edison how had he done that
- c) they asked Edison how did he do that
- d) they asked Edison how that was done

Interrogative sentence এর narration করতে গেলে simple past কে past perfect tense এ নিতে হয়।

23. The opposite of ‘DECRY’ is-

- a) expand
- b) easily led
- c) praise
- d) instruct

Decry মানে নিন্দা। এর opposite হল praise.

24. “I was in two minds about what I should do.” Select the best alternative for the underlined portion

- a) warned
- b) unsure
- c) careful
- d) determined

In two minds মানে দিখায় থাকা বা নিশ্চিত না হওয়া।

25. Can you suggest an alternative \_\_\_ this proposal

- a) to
- b) for
- c) with
- d) in

appropriate preposition হিসেবে alternative এর পর to বসে।

26. Leo’s department can deliver enough parts to fill a storeroom in 8 hours. Jassica’s department use parts to build another product. Her department can deplete a full storeroom in 12 hours. Starting with an empty storeroom how long it will take Leo’s department to fill the storeroom while Jassica’s department is working?

- a) 12
- b) 16
- c) 24
- d) 30

27. A shipping company currently charges the same price for each package were to be increased by \$1, 6 fewer of the packages could be shipped for \$120, excluding sales tax. What is the current price of shipping each package?

- a) \$3
- b) \$4
- c) \$5
- d) \$6

Let the original cost be x.

Now,

$$120/x - 120/(x+1) = 6$$

$$\text{or, } 120 = 6(x^2 + x)$$

$$\text{or, } x^2 + x - 20 = 0$$

$$\text{or, } x^2 + 5x - 4x - 20 = 0$$

$$\text{Therefore, } (x+5)(x-4) = 0$$

So,  $x = -5$  which is not accepted for its negative value.

So,  $x = 4$  is the answer.

Ans is B

28. The sum of the fourth and twelfth term of an arithmetic progression is 20. What is the sum of the first 15 terms of the arithmetic progression?

- a) 150
- b) 170
- c) 210
- d) 270

n th term of A.P. is given by  $a + (n-1)d$

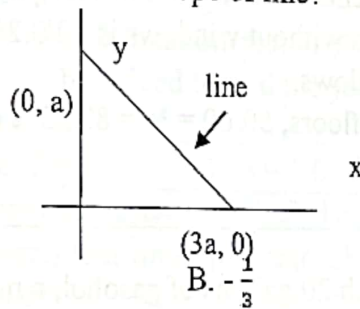
4<sup>th</sup> term =  $a+3d$   
 12<sup>th</sup> term =  $a+11d$   
 Given  $a+3d+a+11d=20 \rightarrow 2a+14d=20 \rightarrow a+7d=10$   
 Sum of  $n$  term of A.P =  $\frac{n}{2}[2a+(n-1)d]$   
 substituting  $n = 15$  ...we get  $\frac{15}{2}[2a + 14d] = 15 [a+7d] = 15*10 = 150$   
 Ans is A

29. In how many different ways can a group of 8 members be divided in 4 teams of 2 members each?

- a) 90                      b) 105                      c) 168                      d) 420

For the first person we can pick a pair in 7 ways;  
 For the second one in 5 ways (as two are already chosen);  
 For the third one in 3 ways (as 4 people are already chosen);  
 For the fourth one there is only one left.  
 So we have  $7*5*3*1=105$   
 Answer: B.

30. If the figure below, what is the slope of line?



- A. -3                      B.  $-\frac{1}{3}$                       C.  $\frac{1}{3}$                       D.  $-\frac{3}{1}$

31. Of the 360 economists, 75% invested in stock market, 40% invested in bond market, and 15% invested in neither stock nor bond. How many of them invested in only stock market?

- a) 162                      b) 108                      c) 216                      d) 270

Total = stock market + bond market + neither - both  
 $100 = 75 + 40 + 15 - \text{Both}$   
 both = 30  
 Only stock market =  $75 - 30 = 45\%$   
 $45\% \text{ of } 360 = 162.$   
 Ans is A

32. Reba's grade was in 80<sup>th</sup> percentile out of 120 grades in her class. In another class of 200 students there was 24 grades higher than Reba's. if nobody had Reba's grade then Reba was what percentile of the two-class combined?

- a) 30<sup>th</sup>                      b) 55<sup>th</sup>                      c) 67<sup>th</sup>                      d) 85<sup>th</sup>

There are two categories: one, the students who scored better than Reba, so their scores are definitely greater than her scores; two, those who didn't score better than Reba, so their scores are less than or equal to Reba's scores. Reba, herself is in the second category. The information that nobody has Reba's score is not relevant. What is important is how many outscored her:

Dream's

on the first test -  $0.2 \times 120 = 24$

on the second test - 24

In total,  $24 + 24 = 48$  out of  $120 + 200 = 320$  outsourced Reba, and represent  $48/320 = 15\%$ . Therefore, Reba's score is in the  $100 - 15 = 85$ th percentile.

Ans is D

33. 50% of the apartment of a certain building have windows and hardwood floors. 25% apartments without windows have hard wood floors. If 40% of the apartments don't have hardwood floors then what percent of the apartments with windows have hardwood floors?

a) 10%                      b) 16.66%                      c) 50%                      d) 83.33%

We can let the total number of apartments = 100.

So, 50 have windows and hardwood floors.

Since 40 do not have hardwood floors, then 60 do have hardwood floors.

Thus,  $60 - 50 = 10$  have hardwood floors but no windows.

We are given that 25% of the apartments without windows have hardwood floors and we found the number of such apartments is 10. If 25% of the apartments without windows is 10, the total number of apartments without windows is  $10/0.25 = 40$ . Thus, there are  $100 - 40 = 60$  apartments that have windows.

Since 50 of them have hardwood floors,  $50/60 = \frac{5}{6} = 83.33\%$  of them have hardwood floors.

Answer: D

34. Bob just filled his car gas tank with 20 gallons of gasohol, a mixture of 5% ethanol and 95% gasoline. If his car runs best on a mixture of 10% ethanol and 90% gasoline then how many gallons of ethanol must be added to his car tank to achieve optimal performance?

a) 20/19                      b) 10/9                      c) 9/10                      d) 1

It is better to apply formula of weighted average:

$$V1/V2 = (C2 - C3) / (C3 - C1)$$

V1 and V2 => initial and final volumes of mixture respectively

C1 = Initial concentration of fluid = 5%

C2 = Concentration of additive fluid = 100% ethanol in our case

C3 = Desired concentration of fluid = 10%

$$20/V2 = (100 - 10) / (10 - 5)$$

$$V2 = 100/90 = 10/9$$

Ans is B

35. A certain city with population of 132000 is to be divided into 11 voting districts, and no districts is to be have not more than 10% greater that the population of any other district.

What is the minimum population that the least population districts could be?

a) 11000                      b) 10900                      c) 11100                      d) 10700

Weighted averages... That would be the solution to the question.

Voting districts = 11

Total = 132,000

Now how do we get "the least" value.... We make one min and the rest of the district equal to each other. It is absolutely imperative that you understand this statement. If all the rest are maximum possible value only then will you get the least possible value for one voting district.

From here on in, it is just about setting up the equation:

Let minimum = a

So max value possible =  $(10/100)a + a$

Now write the equation...

1 of minimum and 10 of maximum value so.....

$$1*a + 10*(a + 0.1a) = 132,000$$

Solve for a = 11,000

Ans is A

36. Shantu, Ragina and Bikash ran a 20-mile race. Shantu and Ragina's combined times exceeded Bikash's time by exactly 2 hours. If nobody ran faster than 8 mile per hour, who could have win the race?
- i) Shantu                      ii) Ragina                      iii) Bikash  
 a) i                              b) ii                              c) iii                              d) i or ii
37. A certain investment at an annual interest of 8%, compound quarterly. Which of the following equation can be solved to find the years, x, that it would take for the investment increase by a factor of 16?
- a)  $16 = 1.02^{x/4}$       b)  $2 = 1.02^x$       c)  $16 = 1.08^{4x}$       d)  $2 = 1.02^{x/4}$

If we apply 8% annual interest, compounded quarterly, then we apply one quarter of the interest (or 2% interest) four times per year. That is, in one year, we will multiply the value of our investment by 1.02 four times, or in other words, by  $(1.02)^4$ . So, if we invest for x years, we will apply 2% interest 4x times, so will multiply the value of our initial investment by  $(1.02)^{(4x)}$ . Now, we know that the value has increased by a factor of 16, so

$$(1.02)^{(4x)} = 16$$

$$(1.02^{4x})^4 = 2^4$$

$$1.02^x = 2$$

Ans is B

38. The ratio of boys to girl in class A is 3 to 4. The ratio of boys to girls in class B is 4 to 5. If the classes were combined the ratio of boys to girls is 17 to 22. If the number of boys in class B is 1 less than that of in class A, and f the number of girls in class B is 2 less than that of class A, how many girls in class A?
- a) 8                              b) 11                              c) 12                              d) 15

Since it is given that the ratio of boys to girls in Class A is 3 to 4 - so we can quickly eliminate the answer choices which are not multiples of 4.

so ans can either be 8 or 12.

With 8 as answer - no of girls = 8

With 12 as answer - no of girls = 12

Now Class A has one more boy and two more girls than class B and also the ratio of boys to girls in Class B is 4 to 5.

So we are looking for number of girls in B to be divisible by 5.

With 8 as answer  $\rightarrow$  Girls =  $8-2 = 6$ . (Not possible)  
 With 12 as answer  $\rightarrow$  Girls =  $12-2 = 10$ .  
 Ans is C

39. A set of 15 different integers has a range of 25 and median of 25. What is greatest possible integers that could be in this set?  
 a) 37                      b) 40                      c) 43                      d) 50

The largest in the set minus the smallest in the set should be 25  
 All the integers are different  
 Use the options. If 50 is the largest and the range is 25, the smallest is 25, which could have been if the integers were allowed to be same in the set.  
 Next option to check is 43.  $43 - 25 = 18$ . Can 18 be a part of the set and at the same time there are no repetitions and 25 is the median? Yes  
 18, 19, 20, 21, 22, 23, 25, 6 more numbers, 43  
 Ans is C

40. Each digit in two-digit number G is halved to form a new two-digit number H. which of the following could be the sum of G and H?  
 a) 89                      b) 129                      c) 137                      d) 153

Two-step solution:  
 $G + G/2 = 3G/2 \rightarrow$  the sum is a multiple of 3.  
 G is a two-digit number  $\rightarrow G < 100 \rightarrow 3G/2 < 150$ .  
 Among the answer choices the only multiple of 3 which is less than 150 is 129.  
 Answer is B

41. What is the unit digit of  $177^{28} - 133^{23}$ ?  
 a) 1                      b) 3                      c) 4                      d) 6

Unit digit of  $177^{28} = 1$   
 Unit digit of  $133^{23} \Rightarrow 7$   
 Hence as the Unit digit of the first term is less  
 The Unit digit of the result will be  $\Rightarrow 11-7 \Rightarrow 4$   
 Ans is C

42. The waiter at an expensive has noticed that 60% of the couples order desert and coffee. However 20% of the couples who order desert don't order coffee. What is the possibility that next couple that the waiter seats will not order desert?  
 a) 20%                      b) 25%                      c) 40%                      d) 60%

Let total number of couples be 100.  
 60% order Dessert & Coffee = 60 couples.  
 20% who order Dessert do not order coffee  $\Rightarrow$  80% who order dessert also order coffee this is given to be 60.  
 Hence total number of couples who order Dessert is  $60 \times 100 / 80 = 75$ .  
 Number of couples who do NOT order Dessert =  $100 - 75 = 25$ .  
 The probability that next order will not have dessert is 25%.  
 Ans is B

43. A, b, c, d are consecutive integers and  $a < b < c < d$ . if the product of b, c and d is twice than that of a, b, and c then bc = ?  
 a) 6                      b) 12                      c) 20                      d) 30

Here,  $bcd = 2abc$   
 so,  $d = 2a$   
 and we know,  $a < b < c < d$   
 so the series is like,  $3 < 4 < 5 < 6$   
 Finally,  $bc = 4 \times 5 = 20$   
 Ans is C

44. When a cylindrical tank is filled with water at rate of 22 cube meter per hour, the level of the water rise at a rate of 0.7 meter per hour. Which of the following is the best approximation of the radius of the tank?  
 a)  $\sqrt{10}$                       b) 4                      c) 5                      d) 10

We are basically told that a cylinder with a height of 0.7 (7/10) meters has the volume of 22 cubic meters.  
 Volume of a cylinder =  $\pi r^2 h$   
 $\pi = 22/7$   
 $h = 7/10$   
 So, putting the values in formula, we get,  $r = \sqrt{10}$   
 Ans is A

45. Is  $x > 0$ , what is the least possible value of  $x + 1/x$ ?  
 a) 0.5                      b) 1                      c) 1.5                      d) 2

Note that the product of the terms  $x$  and  $1/x$  is a constant  $x \cdot (1/x) = 1$   
 So the sum will be minimum when the terms are equal.  
 $x = 1/x$   
 $x^2 = 1$   
 $x = 1$  (since  $x$  must be positive)  
 Least possible value of  $x + 1/x = 1 + 1/1 = 2$   
 Ans is D

46. ABCDEFG  
 what is the letter is three to the right of the letter immediately to the left of the letter three to left of the letter two to right of the letter F?  
 a) B                      b) D                      c) E                      d) G

47. What is the odd one out?  
 a) incidental                      b) seminal                      c) pivotal                      d) substantive

48. 329 : 15  
 746 : 34

which number below have the same relationship to each other as the two set of number above?

- a) 287 : 22                      b) 698 : 62                      c) 942 : 68                      d) 749 : 35  
 49. May, rid, bar, sea, ???, den, row, led – which word is missing?  
 a) can                      b) pan                      c) hem                      d) leg

50. 'Paypal' is wholly own subsidiary of ?  
 a) Google      b) eBay      c) Yahoo      d) Microsoft
51. Which is the biggest destination of Bangladesh apparel?  
 a) USA      b) EU      c) Germany      d) France
52. Parliament of Bangladesh is a unicameral legislature consisting of -  
 a) 360 members      b) 340 members      c) 330 members      d) 350 members
53. 'Parachute' coconut oil is a product of-  
 a) Kohinul Chemical      b) Square      c) Marico Limited      d) Lalbagh Chemical
54. Which organization of Bangladesh along with a Chinese organization has recently invented genome sequencing of buffalo?  
 a) ACI      b) Pran      c) Square      d) Lal teer
55. Which one is not a stock market index of Chittagong stock market  
 a) CSCX      b) CSE 30      c) CASPI      d) CSE 20

1. D	2. B	3. A	4. B	5. A	6. D	7. B	8. C	9. B	10. B
11. D	12. D	13. C	14. A	15. D	16. A	17. C	18. C	19. D	20. C
21. B	22. A	23. C	24. B	25. A	26. C	27. B	28. A	29. B	30. B
31. A	32. D	33. D	34. B	35. A	36. D	37. B	38. C	39. C	40. B
41. C	42. B	43. C	44. A	45. D	46. D	47. A	48. C	49. D	50. A
51. B	52. A	53. C	54. C	55. C	56.	57.	58.	59.	60.