

# PAST QUESTIONS AND ANSWERS SAMPLE

This is a sample past questions and answers from [ISMYSCHOOL.NET](https://www.ismyschool.net).

The Sample only contains two pages:

- The first page will contain some of the past questions from a particular year from the school.
- The Second page will contain either some of the answers or all the answers for the particular year from which the sample questions was used.

If you want to get the full past questions and answers which contains more than 5 years (can be more than or less depending on the school); follow the instructions on the last page.



**FEDERAL POLYTECHNIC NEKEDE OWERRI, IMO STATE**  
**2014/2015 NATIONAL DIPLOMA (ND) SCIENCES ADMISSION SCREENING TEST**  
**FOR (AE, CHE, CE, EE, ME, COMPUTER ENGR.) ON 9<sup>TH</sup> OCTOBER, 2014.**

**INSTRUCTION:** Answer all questions      **TIME:** 40 Minutes  
**ENGLISH LANGUAGE**

**Choose the word opposite in meaning to the underlined word.**

1. The principal wants us to \_\_\_\_\_ the motion, so don't oppose it. (a) sustain (b) support (c) defame (d) applaud
2. He denied that he never \_\_\_\_\_ committing the offence in his earlier statement.  
(a) Admitted      (b) argued      (c) negated      (d) colluded.
3. The brevity of the guest of honour's address contrasts with the \_\_\_\_\_ of the chairman's opening remarks.  
(a) Intensity      (b) solidity      (c) affinity      (d) verbosity
4. The long trek exhausted him so he needed to rest to \_\_\_\_\_ himself.  
(a) Repose      (b) remark      (c) recuperate      (d) replace
5. Polygamy is a very common in Africa, whereas the only acceptable form of marriage in Europe is \_\_\_\_\_.  
(a) monogamy      (b) bigamy      (c) celibacy      (d) polyandry.

**From the words lettered A to E choose the word that best completes each of the following sentences:**

6. The local government election result was cancelled because of widespread \_\_\_\_\_ during voting.  
(a) Offence      (b) accusation      (c) violence      (d) irregularities.
7. He was \_\_\_\_\_ to have escaped unhurt from the collapsed building  
(a) Fortunate      (b) brilliant      (c) agile      (d) unfortunate.
8. The out-going leader warned his successor to beware of \_\_\_\_\_ who praise every activity of government, whether good or bad. (a) Critics      (b) favourites      (c) enthusiasts      (d) sycophants
9. The officers pledged their \_\_\_\_\_ loyalty to the new government.  
(a) Indefatigable      (b) complete      (c) questionable      (d) unalloyed
10. We returned home late in the night because our car had a \_\_\_\_\_.  
(a) Breakthrough      (b) breakdown      (c) break off      (d) break out
11. Cosmetics area used to cover the \_\_\_\_\_ of the nature. (a) Difficulties (b) deficits (c) defects (d) defaults

**MATHEMATICS**

12. If the second and forth terms of a G.P are 8 and 32 respectively. What Is the sum of the first four terms?  
(a) 28      (b) 40      (c) 48      (d) 60
13. Evaluate  $\frac{5.34 \times 64.7}{2.7}$       (a) 1.323      (b) 13. 22      (c) 133.2      (d) 1332
14. Factorize the following expression  $2x^2 + x - 15$   
(a)  $(2x+5)(x-3)$       (b)  $(2x-5)(x+3)$       (c)  $(2x-5)(x-3)$       (d)  $(2x+5)(x+3)$
15. If 5 times a certain integer is subtracted from twice the square of the integer, the result is 63.  
Find the integer      (a) 21      (b) 9      (c) 7      (d) 4
16. Points X and Y are respectively 20km North and 9km East of a point O. what is the bearing of Y and X correct to the nearest degree?  
(a)  $024^\circ$       (b)  $114^\circ$       (c)  $156^\circ$       (d)  $204^\circ$
17. Given that  $\tan \theta = \frac{3}{5}$ . Find  $\sin \theta$   
(a)  $\frac{5}{\sqrt{34}}$       (b)  $\frac{3}{\sqrt{34}}$       (c)  $\frac{3}{4}$       (d)  $\frac{5}{4}$
18. Solve  $6(x-4) + 3(x+7) = 3$   
(a)  $\frac{3}{2}$       (b)  $\frac{2}{3}$       (c)  $\frac{1}{2}$       (d)  $\frac{1}{3}$
19. How many different ways can 4 books be put into 6 bags, not more than one in each?  
(a) 320      (b) 340      (c) 360      (d) 120

WISDOM BEGINS AT GOD IS THE BEGINNING OF WISDOM

**SOLUTION TO 2014/2015 NATIONAL DIPLOMA (ND) SCIENCES  
ADMISSION SCREENING TEST FOR  
(AE, CHE, CE, EE, ME, COMPUTER ENGR.)**

**ENGLISH LANGUAGE**

1.B    2.A    3.D    4.C    5.A

6.D    7.A    8.D    9.A    10.B    11.C

**MATHEMATICS**

12. Sum, of GP

$$S = \frac{a(r^n - 1)}{(r - 1)}$$

Where  $a$  = first term,  $r$  = common different

To find  $r$

$$U_1 = ar^{n-1}$$

$$U_2 = ar^{2-1} = 8$$

$$ar^1 = 8 \quad (1)$$

$$U_4 = ar^{4-1} = 32$$

$$ar^3 = 32 \quad (2)$$

Divide equation 2 by 1

$$\frac{ar^3}{ar^1} = \frac{32}{8}$$

$$r^2 = 4$$

$$r = \sqrt{4}$$

$$r = 2$$

To find  $a$

substitute  $r = 2$  in equation 1

$$ar^1 = 8$$

$$a(2) = 8$$

$$2a = 8$$

$$a = \frac{8}{2}$$

$$a = 4$$

$\therefore$  the sum of first four terms

$$S_4 = \frac{a(r^n - 1)}{(r - 1)}$$

$$S_4 = \frac{4(2^4 - 1)}{2 - 1} = \frac{4(16 - 1)}{1}$$

$$S_4 = 4(15)$$

$$S_4 = 60 \quad \text{ans D}$$

13.  $\frac{5.34 \times 64.7}{2.7}$

$$= \frac{345.498}{2.7}$$

$$= 127.96 \quad \text{options incorrect}$$

14.  $2x^2 + x - 15 = 0$

Using factorization method

$$2x^2 + 6x - 5x - 15 = 0$$

$$2x(x+3) - 5(x+3) = 0$$

$$(2x-5)(x+3) \quad \text{ans B}$$

15. let the integer be  $y$ ,  
5 times the integer =  $5y$   
square of the integer =  $y^2$

$$2y^2 - 5y = 63,$$

$$2y^2 - 5y - 63 = 0$$

$$2y^2 - 14y + 9y - 63 = 0$$

factorizing

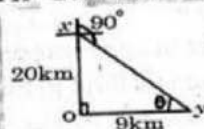
$$2y(y-7) + 9(y-7) = 0$$

$$y-7 = 0, \quad 2y+9 = 0,$$

$$y = 7, \quad 2y = -9, \quad y = -9/2$$

$$\therefore y = 7 \quad \text{ans C}$$

16. Given  $X = 20\text{km}$  and  $Y = 9\text{km}$



recall that  $\tan = \frac{\text{opp}}{\text{adj}}$

$$\tan \theta = \frac{20}{9}, \quad \theta = \tan^{-1} 2.22$$

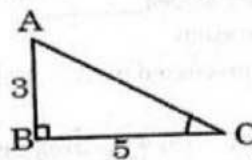
$$\theta = 65.55, \quad \theta \cong 66^\circ$$

since alternate angles are equal

the bearing of Y and X =  $90 + \theta$

$$= 90 + 66 = 156^\circ \quad \text{ans C}$$

17. Given that  $\tan \theta = \frac{3}{5}$ , find  $\sin \theta$



$$\tan = \frac{\text{opp}}{\text{adj}}, \quad \sin = \frac{\text{opp}}{\text{hyp}}$$

Using Pythagoras theorem, to find hypotenuse

$$AC^2 = AB^2 + BC^2$$

$$AC^2 = 3^2 + 5^2$$

$$AC^2 = 9 + 25$$

$$AC^2 = 34$$

$$AC = \sqrt{34}$$

$$\therefore \sin \theta = \frac{3}{\sqrt{34}} \quad \text{ans B}$$



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**Account Name:** BENTENBLOG

**Account Number:** **4950590010**

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