

# UNICAL Post UTME Past Questions and Answers



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**ENGLISH LANGUAGE**

**Choose the expression or word which BEST COMPLETES each sentence**

1. I am intent \_\_\_\_\_ continuing my course  
A. on      B. with      C. as      D. to      E. at
2. \_\_\_\_\_ equations use letters to stand for numbers  
A. Simultaneous      B. Simultaneous  
C. Simultaneous      D. Simultaneous

**From the options A to D, choose the expression that is OPPOSITE IN MEANING to the underlined word(s).**

3. Elemi's **sagacity** contrasted sharply with his friend's \_\_\_\_\_  
A. Timidity      B. Wisdom      C. Fluency      D. Foolishness
4. Some people keep **ferocious** animals as pets.  
A. Gentle      B. Wild      C. Fierce      D. Domestic

**From the options listed A – D select the word that best CAPTURES THE MEANING of the italicized part of the sentences**

5. Every visitor to Calabar must visit *where photographs and artifacts of early European colonial presence in Nigeria are kept*  
A. Archives      B. Ranch      C. Market      D. museum

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word**

6. Ebire's generosity turned out to be her **Achilles' heel**  
A. Strong point      B. Favourite habit      C. Weak point      D. Less popular virtue

**Choose the expression or word which BEST COMPLETES each sentence**

7. The giant hydro-electric project is among the \_\_\_\_\_ of colonial rule in Southern Africa  
A. Inheritance      B. Remnants      C. Legacies      D. Evidence
8. Ukpabio is proficient \_\_\_\_\_ tailoring  
A. With      B. In      C. Of      D. At

**Choose the word or phrase that is OPPOSITE IN MEANING to the underlined**

9. The demonstration was organized by hoodlums  
A. Criminals      B. Activists      C. Thugs      D. Soldiers
10. The plaintiff convinced the court that the murder was inadvertent  
A. Brutal      B. Wicked      C. Careless      D. Premeditated
11. The bush burning festival will further renew our forest resource  
A. Increase      B. Reduce      C. Deplete      D. Remove

**Choose from the options lettered A – E the one that has the correct stress with the word given. In each word only the stressed part is in CAPITAL**

12. Planetarium  
A. PLAN-e-tar-i-um      B. plan-E-tar-i-um      C. plan-e-TAR-i-um      D. plan-e-tar-l-um

**Choose from the options the word which has THE SAME SOUND as the underlined**

13. COURTESY      A. our      B. Court      C. Shirt      D. Tour

**From the options listed A – D select the word that best CAPTURES THE MEANING of the italicized part of the sentences.**

14. Lecturers assisted Prof. Atahiru Jega when *Nigerians chose their political leaders*  
A. election      B. nomination      C. appointment      D. selection
15. Mother always *pays attention to details*  
A. frivolous      B. interesting      C. rigid      D. meticulous

**Choose the option that BEST EXPLAINS the information conveyed in the sentences below**

16. The rampage in England shows that youths react the same way under provocation  
A. youths in England are very good      B. youths in England are miscreants  
C. youths act the same way when provoked      D. youths provoke people in England

**From the options choose the appropriate STRESS pattern. The stressed syllables are written in CAPITAL letters.**

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17. Intimacy  
A. INTimacy B. inTImacy C. intiMacy D. INTImacy

18. consideration  
A. CONsideration B. consideration C. consiDERation D. considerAtion

**From the words lettered A – D choose the word that rhymes with the given word**

19. purity  
A. plentiful B. security C. purify D. nonentity

**From the words lettered A – D choose the word that rhymes with the given word**

20. beautiful  
A. beautify B. beautification C. dutiful D. dignify

**Choose from the options lettered A – E the one that has the correct stress with the word given. In each word only the stressed part is in CAPITAL**

21. constitutional  
A. con-sti-tu-tion-AL B. con-sti-TU-tion-al C. CON-sti-tu-tion-al D. con-STI-tu-tion-al

22. abnormality  
A. AB-nor-ma-li-ty B. ab-nor-ma-li-TY C. ab-nor-ma-LI-ty D. ab-nor-MA-li-ty

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word**

23. The use of Latin expressions in English is now dated  
A. well-established B. historical C. old-fashioned D. popular

24. His uncle showed affected interest in his welfare.  
A. pretended B. loving C. genuine D. deep

**From the options choose the expression that BEST COMPLETES each sentence**

25. I am qualified for the job; ---- ?  
A. haven't I B. Isn't it C. aren't I D. ain't I

26. My sister along with her colleagues ---- the museum today.  
A. are visiting B. have visited C. were visiting D. is visiting

**Choose the word that has the SAME SOUND as the one represented by the underlined letter**

27. mansion  
A. cheap B. leisure C. peace D. action

28. time  
A. print B. might C. flip D. illegal

**From the options choose the expression that BEST COMPLETES each sentence.**

29. Every student \_\_\_\_\_ before the principal entered the hall  
A. has arrived B. have arrived C. had arrived D. arrived

30. The workers presented \_\_\_\_\_ to the National Assembly  
A. five pages document B. five-paged document  
C. a five - paged document D. a five - page document

**From the options A to D, choose the expression that is NEAREST IN MEANING to the underlined word(s).**

31. A dogged student is likely to succeed  
A. Studious B. Clever C. Curious D. Determined

**Choose the option that best explains the information conveyed in the sentence below**

32. When I visited Okon I only gave him a congratulatory card  
A. \_\_\_\_\_ the only person I visited was Okon and nobody else  
B. it was only Okon that I gave a congratulatory card  
C. Okon only wanted a congratulatory card  
D. All that I gave Okon when I visited him was a congratulatory card

**From the options choose the expression that BEST COMPLETES each sentence**

33. The police ----- up a list of suspects in the recent bombings.  
A. Has drawnd B. Has drawn C. have drawnd D. Have drawn

**Choose the word that has the same sound as the one represented by the underlined letter**

34. book  
A. lamb B. flock C. slump D. club



53. Astronomers keep a close watch of the night sky in order not to miss the \_\_\_\_\_ appearance of some stars  
A. Parallel                      B. Periodic                      C. Regular                      D. Constant

Choose the word or phrase from options A-D which has the nearest meaning to the underlined word or words in each sentence.

54. My mother has refused to come to live in Lagos because she prefers the tranquil life in the village to the hurly burly of the city.  
A. Sweet                      B. Prosperous                      C. Peaceful                      D. Decent
55. A lorry larger than an elephant was struck on the bridge  
A. As large as an elephant                      B. Carrying an elephant.  
C. That looked like an elephant                      D. Of enormous proportions.

Choose the option that best completes the sentence.

56. The dentist found that his patient's teeth \_\_\_\_\_  
A. Have long decayed                      B. Have long been decayed  
C. Have long being decayed                      D. Had long decayed
57. In order to carry out the necessary examination, the dead body was \_\_\_\_\_  
A. Extracted                      B. Exhumed                      C. Extradited                      D. Expelled
58. He went abroad with a view \_\_\_\_\_ a business partner  
A. To fund                      B. To funding                      C. To be funding                      D. To have funded

In question 59, which of the options express the same idea as the one in quote?

59. 'To put something aside' is to  
A. Put it one's side.                      B. Put it in a side pocket for future use.  
C. Keep something for some special purpose.                      D. Keep in safety.

Select the option that best explains the sentence:

60. The painting was beautifully faked  
A. The painting was a good deceptive replica                      B. The painting was well framed and displayed  
C. The painting was deceptively decorated                      D. The painting was carefully hung

From the alternatives provided select the one which best completes the sentence

61. If only I \_\_\_\_\_ insured? But I wasn't. But I have to pay a lot of money  
A. am                      B. have been                      C. had been                      D. was to be
62. Since the petition writer did not include his name, the vice chancellor refused to act on such \_\_\_\_\_ letter  
A. a spontaneous                      B. an anonymous                      C. a scandalous                      D. a cowardly
63. The first graduation ceremony of the university was attended by men from all \_\_\_\_\_ of life  
A. works                      B. areas                      C. walks                      D. walk

Choose the word or phrase from options A - D which has the nearest meaning to the underlined word or words in each sentence

64. He should be able to do it alone  
A. he would be able to do it alone                      B. he ought to be able to do it alone  
C. he has to be able to do it alone                      D. he will do it alone
65. The old man was said to have died intestate  
A. without an estate                      B. in his estate  
C. without a will                      D. in good state

From the alternatives provided select the one which best completes the sentence

66. If only I \_\_\_\_\_ insured? But I wasn't. But I have to pay a lot of money  
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A. he would be able to do it alone    B. he ought to be able to do it alone  
C. he has to be able to do it alone    D. he will do it alone
70. The old man was said to have died intestate  
A. without an estate    B. in his estate    C. without a will    D. in good state

In each of the following questions, the word in capital letter has the emphatic stress. Choose the option that best fits the expression in the sentence.

71. The man **BOUGHT** the newspaper  
A. Is this the newspaper which the man bought?    B. Did the man read the newspaper?  
C. Who bought the newspaper?    D. What did the man buy?
72. The chief **RAN** to the place  
A. Where did the chief run to?    B. Did the chief walk to the place?  
C. Did the princess run to the place    D. Who ran to the place?

From the options lettered A - D choose the word opposite in meaning to the underlined words in the following sentences

73. Ebere's \_\_\_\_\_ contrasts with his brother's indolence  
A. indulgence    B. laziness    C. labour    D. diligence
74. The discussion ended on an amicable note even though there was grave \_\_\_\_\_ at the beginning  
A. hostility    B. incompatibility    C. irresponsibility    D. camaraderie

Select the word that best captures the meaning of the italicized part of the sentence

75. Some politicians in the area were said to be engaged in *double dealing*  
A. eschewing    B. effeteness    C. duplicity    D. dubiousness

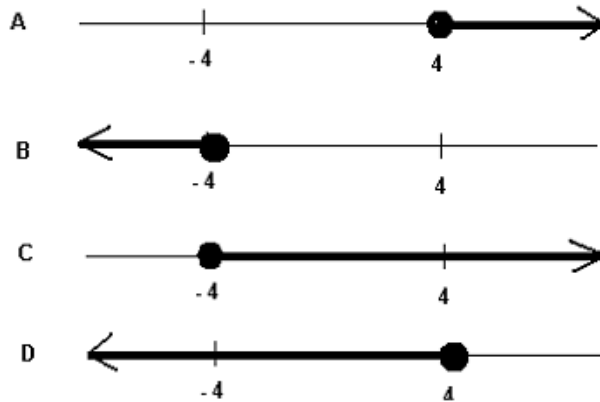
**MATHEMATICS**

- Find the average of the first four prime numbers greater than 10  
A. 20                      B. 19                      C. 17                      D. 15
- Given that  $P = \frac{1}{\sqrt{r}}$  and  $p = 3$  when  $r = 16$ , find the value of  $r$  when  $p = \frac{3}{2}$   
A. 48                      B. 64                      C. 72                      D. 324
- $4 \times 10^{-5} =$   
A. - 40,000    B. - 200                      C. 0.0004                      D. 0.00004
- Which of the following equations corresponds the data in the table?

x	y
-20	-1/8
-10	-1/3
0	1/2
5	2/9
20	1/12

- A.  $y = 1 / (x + 2)$                       B.  $y = 2 / (x + 4)$   
C.  $y = (x - 1) / (x + 2)$                       D.  $y = 2 / (x - 2)$
- The quadratic equation whose roots are at  $x = 3$  and  $x = 5$  is given by  
A.  $(x - 3)(x - 5) = 1$     B.  $(x + 3)(x + 5) - 9 = (x + 3)(x + 5) - 25$   
C.  $(x + 3)(x + 5) = 0$     D.  $x^2 - 8x = -15$
  - There are 15 balls in a box: 8 balls are green, 4 are blue and 3 are white. Then 1 green and 1 blue balls are taken from the box and put away. What is the probability that a blue ball is selected at random from the box?  
A. 3/13                      B. 4/15                      C. 3/15                      D. 4/13
  - If  $-3/(a - 3) = 3/(a + 2)$ , then  $a = ?$   
A. -3                      B. -2                      C. 1/2                      D. 2
  - What is the average of  $7/8$  and  $3/4$ ?  
A.  $13/8$                       B.  $5/6$                       C.  $5/3$                       D.  $13/16$
  - If the hypotenuse of a right triangle is 10 inches long and one of its legs is 5 inches long, how long is the other leg?  
A. 5                      B.  $5\sqrt{3}$                       C.  $5\sqrt{5}$                       D. 75
  - If  $8y = 3x - 11$ , then  $x =$   
A.  $(88/3)y$                       B.  $(8/3)y + 11$                       C.  $(8/3)y - 11$                       D.  $(8y + 11)/3$
  - Which of the statements describes the solution set for  $-2(x + 8) = -2x + 20$ ?  
A.  $x = -2$  only                      B.  $x = 0$  only                      C.  $x = 20$  only                      D. There are no solutions for this equation.
  - When graphed in the  $(x,y)$  coordinate plane, at what point do the lines  $2x + 3y = 5$  and  $x = -2$  intersect?  
A.  $(-2,0)$                       B.  $(-2,5)$                       C.  $(0,5/3)$                       D.  $(-2,3)$
  - Which of the following is equal to  $\sqrt{45}$ ?  
A. 15                      B.  $5\sqrt{3}$                       C.  $9\sqrt{5}$                       D.  $3\sqrt{5}$
  - If  $a = 3$ , then  $2 / (1/7 + 1/a) = ?$   
A. 5                      B.  $21/10$                       C. 20                      D.  $21/5$
  - If the expression  $x^3 + 2hx - 2$  is equal to 6 when  $x = -2$ , what is the value of  $h$ ?  
A. 0                      B. -2                      C. -4                      D. 4
  - Which of the graphs below is the solution set of  $-3x \leq 12$

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17. If the domain of function  $f$  given by  $f(x) = -x^2 + 6x$  is given by the interval  $[0, 6]$ , then the range of  $f$  is given by the interval  
**A.  $[0, 9]$  B.  $[0, 6]$  C.  $[0, 3]$  D.  $[3, 6]$**
18. The  $x$  intercepts of the graph of  $y = -x^2 + 3x + 18$  are given by  
**A.  $(6, -3)$  B.  $(-3, 6)$  C.  $(-3, 0)$  and  $(6, 0)$  D.  $(3, 0)$  and  $(-6, 0)$**
19. The sum of the first  $n$  terms of a linear sequence  $S_n = n^2 + 2n$ . Determine the general term of the sequence  
**A.  $n+1$  B.  $2n+1$  C.  $3n+1$  D.  $4n+1$**
20. The length of a rectangle is 3 times its width. If the width of the rectangle is 5 inches, what is the rectangle's area, in square inches?  
**A. 15 B. 20 C. 30 D. 75**
21. What is the slope of the line  $4x = -3y + 8$   
**A. 4 B.  $-3/4$  C.  $-4/3$  D. 8**
22. The length of a rectangle is 3 times its width. If the width of the rectangle is 5 inches, what is the rectangle's area, in square inches?  
**A. 15 B. 20 C. 30 D. 75**
23. If  $1.56^x = 2$ , then  $x =$   
**A.  $\ln 1.56 / \ln 2$  B.  $\ln 2 / \ln 1.56$  C.  $2 / \ln 1.56$  D.  $\ln 2 / 1.56$**
24. A machine valued at ₦20,000 depreciates by 10% every year. What will be the value of the machine at the end of two years?  
**A. ₦16,200 B. ₦14,000 C. ₦12,000 D. ₦16,000**
25.  $x^3 - 2x^2 + 4x - 8 = 0$  if  $x =$   
**A. 4 B. 8 C. 2 D. -8 E. -4**
26. The sum of integers from 4 to 8 plus the sum from 12 to 16 is  
**A. 80 B. 120 C. 100 D. 110 E. 90**
27. If the diagonals of a quadruplet are equal then the quadruplet is a  
**A. square B. parallelogram C. rhomboid D. trapezoid E. rectangle**
28. The sum of four powers of  $q$  starting from power 0 is 85. Then  $q =$   
**A. 2 B. 3 C. 4 D. 5 E. 6**
- |                           |   |   |   |    |    |    |
|---------------------------|---|---|---|----|----|----|
| <b>Amount (in Naira)</b>  | 3 | 6 | 9 | 12 | 15 | 18 |
| <b>Number of Students</b> | 3 | 9 | 6 | 15 | 3  | 12 |
29. What is the mode  
**A. ₦3 B. ₦6 C. ₦9 D. ₦12 E. ₦15**
30. Find the median of the distribution  
**A. ₦3.00 B. ₦9.00 C. ₦12.00 D. ₦15.00 E. ₦18.00**

31. Factorize:  $3a^2 - 11a + 6$   
A.  $(3a-2)(a-3)$       B.  $(2a-2)(a-3)$       C.  $(3a-2)(a+3)$       D.  $(3a+2)(a-3)$   
E.  $(2a-3)(a+2)$
32. The number of telephone call  $N$  between two cities A and B varies directly as the population  $P_A, P_B$  in A and B respectively and inversely as the square of the distance  $D$  between A and B. which of the following equations represents this relation?  
A.  $N = \frac{kp_A}{D^2} + \frac{CP_B}{D^2}$       B.  $N = \frac{kp_A P_B}{D^2}$       C.  $N = kDP_A P_B$   
D.  $N = kDP_A + CDP_B$       E.  $N = kD^2 P_A P_B$
33. In a soccer competition in one season, a club had scored the following goals: 2, 0, 3, 3, 2, 1, 4, 0, 0, 5, 1, 0, 2, 2, 1, 3, 1, 4, 1 and 1. The mean, median and mode are respectively  
A. 1, 1.8 and 1.5      B. 1.8, 1.5 and 1      C. 1.8, 1 and 1.5  
D. 1.5, 1 and 1.8
34. Add the same number to the numerator and denominator of  $\frac{3}{18}$ . If the resulting fraction is  $\frac{1}{2}$  then the number added is  
A. 13      B. 14      C. 15      D. 12
35.  $x^5 - 3x^4 + 4x - 12 = 0$  if  $x =$   
A. 4      B. 3      C. 2      D. -8
36. Simplify  $\frac{a-b}{a+b} - \frac{a+b}{a-b}$   
A.  $\frac{-4ab}{a^2 - b^2}$       B.  $\frac{a^2}{a^2 - b^2}$       C.  $\frac{b^2}{(a-b)^2}$       D.  $\frac{4ab}{a^2 - b^2}$
37. If opposite sides of a quadruple are equal then it is a  
A. square      B. trapezoid      C. parallelogram      D. rhomboid      E. no such quadruple
38. The sum of even numbers from 12 to 18 is  
A. 80      B. 40      C. 70      D. 60      E. 90
39. The sum of powers of 3 starting from power 2 is 117. Then the number of added powers is  
A. 4      B. 2      C. 3      D. 5      E. 1
40. What is the relationship between  $2ab$  and  $a+b$  where  $a, b$  are numbers?  
A.  $2ab \leq a+b$       B.  $2ab \geq a+b$       C.  $2ab \neq a+b$   
D.  $2ab = a+b$       E.  $2ab > a+b$
41. There are four visitors in a party. There are two tables with two seats each. In how many different ways can these guests sit down?  
A. 16      B. 24      C. 20      D. 12      E. 18
42. What is the modal goal scored  
A. 0      B. 1      C. 2      D. 5
43.  $\left( \frac{x^3 - 8}{2 - x} \right) \frac{2x}{x^2 - 4} =$       A.  $\frac{1}{x^2 + 4}$       B. 1      C.  $\frac{x^2 - 4}{x^2 + 4}$       D.  $x^2 + 4$
44. The value of  $\frac{3}{2} \times \frac{10}{21} \times \frac{4}{22} \times \frac{77}{5} =$       A. 5      B. 1/5      C. 2      D. 7
45.  $\tan x + \cot x =$       A.  $\sin 2x$       B.  $2/\sin 2x$       C.  $1/\cos 2x$       D.  $\cos 2x$
46.  $\frac{27x^3 - 8}{3x - 2} =$       A.  $9x^2 - 6x + 4$       B.  $9x^2 + 3x + 4$       C.  $9x^2 - 2x + 4$       D.  $9x^2 + 6x + 4$
47.  $\left( {}^6 C_3 \right)^{\frac{1}{2}} =$       A. 9      B.  $3^{1/2}$       C. 3      D. 27
48. Express 0.00562 in standard form  
A.  $5.62 \times 10^{-3}$       B.  $5.62 \times 10^{-2}$       C.  $5.62 \times 10^2$       D.  $5.62 \times 10^3$

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49. If  $3^{2x} = 27$   
**A. 1** **B. 1.5** **C. 4.5** **D. 18**
50. The population of a village is 5846. Express this number to three significant figures  
**A. 5850** **B. 5846** **C. 584** **D. 585**
51. Simplify  $(\frac{3}{4} - \frac{1}{3}) \times 4 \frac{1}{2} \div 3 \frac{1}{4}$   
**A.  $\frac{3}{2}$**  **B.  $\frac{13}{12}$**  **C.  $13\frac{1}{9}$**  **D.  $17\frac{1}{12}$**
52. Write as a single fraction  $\frac{5}{6r} - \frac{3}{4r}$   
**A.  $\frac{r}{12}$**  **B.  $\frac{1}{12r}$**  **C.  $\frac{r}{6}$**  **D.  $\frac{1}{6r}$**
53. Simplify  $\log_{10}^4 + \log_{10}^{25}$   
**A. 3** **B. 1** **C. 2** **D. 4**
- |                       |   |   |   |   |   |   |
|-----------------------|---|---|---|---|---|---|
| <b>No. of goals</b>   | 0 | 1 | 2 | 3 | 4 | 5 |
| <b>No. of matches</b> | 3 | 5 | 7 | 4 | 1 | 0 |
54. What is the mean goal scored?  
**A. 0.75** **B. 1.75** **C. 1.9** **D. 2**
55.  $\left(\frac{1-\frac{1}{4}}{\frac{4}{5}}\right) \times \left(\frac{1-\frac{1}{2}}{\frac{2}{3}}\right) \times 8 =$   
 $\left(\frac{1-\frac{1}{3}}{\frac{3}{4}}\right) \times \left(\frac{1-\frac{1}{5}}{\frac{1}{5}}\right) \times 8 =$   
**A. 2** **B. 1/6** **C. 1** **D. 4** **E. 3**
56. ₦1, 000,000.00 is put for 4% yearly interest for three years with the interest added at the end of each year to the base. At the end of the three years the money will be  
**A. ₦1, 122,416.00** **B. ₦1, 124,864.00**  
**C. ₦1, 241,232.00** **D. ₦1, 422,232.00** **E. ₦1, 441,122.00**
57. Joe gets ₦40.00 to buy erasers for ₦5.00 each, pencils for ₦7.00 each and rulers for ₦8.00 each so that minimum number of items are bought and all the money is spent, then the number of pencils bought is  
**A. 6** **B. 3** **C. 2** **D. 1** **E. 4**
58.  $\log_a x^2 - \log_a x = 0$  then c  
**A. 4** **B. 3** **C. 5** **D. 2** **E. -3**
59.  $x^3 - 3x^2 + 4x - 12 = 0$  if  $x =$   
**A. 4** **B. 8** **C. 2** **D. 3** **E. -4**
60. Evaluate  $\frac{1}{2} + \frac{3}{4}$  of  $\frac{2}{5} \div 1\frac{3}{5}$   
**A.  $\frac{15}{16}$**  **B.  $\frac{5}{16}$**  **C.  $\frac{49}{50}$**  **D.  $3\frac{1}{5}$**
61. Given that  $y = px + q$  and  $y = 5$  when  $x = 3$ , while  $y = 4$  when  $x = 2$  find the values of  $p$  and  $q$   
**A.  $p = 1, q = 3$**  **B.  $p = 1, q = 2$**  **C.  $p = -2, q = 3$**  **D.  $p = 3, q = -2$**
62. If  $\frac{y-3}{2} < \frac{2y-1}{3}$ , which of the following is true?  
**A.  $y > 7$**  **B.  $y < -7$**  **C.  $y > -7$**  **D.  $y < 7$**
63. A boy estimated his transport fare for a journey as ₦190 instead of ₦200. Find the percentage error in his estimate.  
**A. 95%** **B. 47.5%** **C. 5.26%** **D. 5%**
64. The value of  $\frac{3}{2} \times \frac{10}{21} \times \frac{7}{5} =$  **A. 5** **B. 1/5** **C. 1** **D. 7**
65. There are three boys and three girls in a party. In how many different ways can they dance?  
**A. 12** **B. 6** **C. 9** **D. 8**



**BIOLOGY**

1. The wavelike motion of the muscles of the oesophagus to push each bolus of food downwards is known as  
**A. Anti-peristalsis B. Digestion C. Peristalsis D. Oesophageal motion**
2. Which of these diseases cannot be controlled by killing the vectors?  
**A. River blindness B. Malaria C. Polio D. Cholera**
3. If a tall man (TT) marries a dwarf woman (tt) and they have four children, what will be the ratio of tall to dwarf children?  
**A. 0 tall:4 dwarf B. 3 tall:1 dwarf C. 2 dwarf:2 tall D. 4 tall:0 dwarf**
4. The chromosome is found in which organelle  
**A. The Nucleus B. The Mitochondria C. The Vesicle D. The Cytosol**
5. Photosynthetic organisms are classified as \_\_\_\_\_  
**A. Autotrophs B. Heterotrophs C. Herbivorous D. Omnivorous**
6. Which of the organisms listed below is not a micro-organism?  
**A. Virus B. Tapeworm C. Coccus D. Vibrio cholera**
7. The nervous system is made up of  
**A. Kidney, bladder and liver B. Testes and ovaries  
C. Brain and spinal cord D. Muscles and skeleton**
8. The synthesis of protein takes place in \_\_\_\_\_  
**A. Golgi body B. Ribosome C. Mitochondria D. Nucleus**
9. Mutations involving alterations in the genes are called  
**A. Gene mutations B. Gene changes  
C. Chromosomal mutations D. Chromosomal changes**
10. Which vertebra has a projection on the centrum called odontoid process?  
**A. Atlas B. Axis C. Thoracic D. Lumber**
11. Deamination occurs in  
**A. Kidney B. Pancreas C. Spleen D. Liver**
12. The ability of an organisms to live successfully in an environment is known as  
**A. Succession B. Resistance C. Adaptation D. Competition**
13. The following are connected with the movement of a reflex action  
(1) Central nervous system, (2) Muscle, (3) Skin, (4) Sensory nerve, (5) Motor nerve  
Which of the following sequences indicates a correct path?  
**A. 1-2-3-4-5 B. 2-1-4-5-3 C. 3-4-1-2-5 D. 3-4-1-5-2**
14. Which of the following statements is NOT true of symbiosis?  
**A. Symbionts must be living B. It is an association of 'give and take'  
C. The association may involve two plants D. Association between two similar species**
15. The deficiency of Vitamin D leads to:  
**A. Scurvy B. Pellagra C. Rickets D. Beriberi**
16. Hepatic portal vein is unique because it  
**A. Carries deoxygenated blood B. Begins and ends with capillaries  
C. Is the largest vein in mammals D. Carried digested food**
17. The thoracic vertebrae of a mammal is characterized by the  
**A. Vertebrarterial canal B. Prominent neural arch  
C. Prominent neural process D. Prominent neural spine**
18. A grasshopper respire by means of its  
**A. Lung-books B. Gills C. Lungs D. Tracheal tubes**
19. The inactive state exhibited by an animal during hot dry seasons is termed  
**A. Aestivation B. Dormancy  
C. Resting D. Hibernation**

20. Auxins are produced in the  
A. petiole of leaves  
B. parenchyma of roots and shoots  
C. epidermis of roots and shoots  
D. apical regions of roots and shoots
21. Which of the following methods of reproduction is common in Paramecium and Amoeba?  
A. Conjugation  
B. Sexual reproduction  
C. Binary Fission  
D. Budding
22. An example of cryptic coloration is the:  
A. Mottled colours on moths that rest on lichens  
B. Bright colour of an insect pollinated flower  
C. Green colour of a plant  
D. Bright marks on a poisonous tropical frog on variegated leaves
23. Which of the following organs is responsible for controlling the body temperature regulation and water balance in mammals?  
A. Kidney  
B. Hypothalamus  
C. Parathyroid  
D. Adrenal
24. A man and his wife are both heterozygous for the sickle cell trait. The likely percentage of their offspring that will either be carriers or 'sicklers' is  
A. 75%  
B. 50%  
C. 25%  
D. 100%
25. The brain and the spinal cord make up the  
A. Peripheral nervous system.  
B. Autonomic nervous system  
C. Central nervous system.  
D. Somatic nervous
26. The hormone which regulates the amount of sugar in the blood is  
A. Thyroxine  
B. Auxin  
C. Insulin  
D. Adrenalin
27. Which of the following is the effect of using artificial pollination in plant breeding?  
A. production of healthy crops  
B. improvement of the variety of crops  
C. lengthening the maturity time  
D. making crops susceptible to diseases
28. Which of the following processes will not introduce carbon dioxide into the atmosphere?  
A. breathing  
B. photosynthesis  
C. Respiration  
D. Putrefaction
29. Which of the following does not contribute to the biomass in an ecosystem?  
A. producer's  
B. food chain  
C. consumer's  
D. micro-organisms
30. Which of these diseases cannot be prevented by immunization  
A. Onchocerciasis  
B. Poliomyelitis  
C. Cholera  
D. Tuberculosis
31. Which of the following specialized structures are stimulated by touch, pressure, pain, heat and cold?  
A. receptors  
B. synapse  
C. cell bodies  
D. myelin
32. The process by which plants and animals are modified in structure, physiology and behavior in order to survive is known as  
A. evolution  
B. adaptation  
C. succession  
D. hibernation
33. Thunderstorm can be beneficial to plants because it  
A. kills pests that attack crops  
B. adds lime to the soil  
C. adds nitrates to the soil  
D. makes rain water available to plants
34. When large numbers of organisms share limited space and resources, the result is  
A. immigration  
B. symbiosis  
C. extinction  
D. competition
35. Even though some flowering plants contain accessory pigments which give them colors, they still contain the pigment  
A. melanin  
B. chlorophyll  
C. carotene  
D. xanthophyll
36. Which structure in the maize grain stores food?  
A. radicle.  
B. embryo  
C. cytoplasm  
D. endosperm
37. Which of the following statements is not associated with the theory of natural selection?  
A. There is a struggle for existence  
B. There is competition among the offspring  
C. The weaker offspring's are eliminated  
D. Food and other needs are abundant
38. Nitrogen fixing micro-organisms in leguminous plants live symbiotically in the  
A. branch roots  
B. tap roots  
C. root nodules  
D. root hairs

39. The epidermis of the mammalian skin is an example of a tissue because the cells  
A. prevent light from passing through them                      B. Have a similar structure and function  
C. prevent excessive loss of water                                      D. are impregnated with keratin
40. The phenomenon whereby some organisms with certain features get established in an environment is known as  
A. Partial selection                      B. Artificial selection                      C. Natural selection                      D. Mutation
41. Who formulated the theory of natural selection in evolution?  
A. Gregor Mendel.                      B. Jean Lamarck                      C. Mathias Scheiden                      D. Charles Darwin
42. Which of the following statements is not correct of respiration?  
A. Gaseous exchange occurs by diffusion  
B. Oxygen combines with hemoglobin in the respiratory surface  
C. Carbon dioxide produced in the tissues is removed by the process of osmosis  
D. there are no special organs of respiration in plants
43. Which of the following constitutes the main internal tissues of a leaf?  
A. Cuticle                      B. Mesophyll                      C. Vascular tissue                      D. Lower epidermis
44. Which of the following is an autotrophic mode of nutrition?  
A. Chemosynthesis                      B. Saprophytism  
C. Parasitism                      D. Symbiosis
45. Which of the following structures differentiates an animal cell from a plant cell?  
A. Ribosomes                      B. Cell membrane  
C. Chloroplast                      D. Mitochondrion
46. The change in colour of the chameleon serves as a means of  
A. attraction to the opposite sex                      B. repulsion of the enemy  
C. a camouflage from a predator                      D. regulation of body temperature
47. At which of the following stages of mitosis do the two daughter chromosomes separate completely?  
A. early prophase                      B. telophase  
C. Anaphase                      D. late prophase
48. The role of dead organic matter in the soil is to  
A. Make the soil black.                      B. Increase the mineral salt content.  
C. Provide food for all living organisms                      D. Increase the acidity of the soil.
49. If the petals of a flowering plant are removed, which of the following processes is likely to be affected?  
A. Transpiration                      B. Pollination                      C. Germination                      D. Photosynthesis
50. Which of these substances is likely to be deficient in the diet of a person having goiter?  
A. Potassium                      B. Calcium                      C. Iodine                      D. Sodium
51. Banana, plantain and pineapple can be grouped together because they  
A. produce small seeds                      B. are multiple fruits  
C. produce suckers                      D. have runners
52. The structure in the cell that controls the movement of substances in and out of the cell is the  
A. Cytoplasmic membrane                      B. Nuclear membrane  
C. Cytoplasm                      D. Protoplasm
53. Which of the following statements is not true of osmotic process?  
A. There must be a selectively permeable membrane  
B. The two solutions must be of different concentrations initially  
C. It involves only the movement of water molecules  
D. The two solutions are of equal concentration at the beginning of the experiment.
54. The pulmonary artery carries  
A. de-oxygenated blood from the right ventricle to the lungs  
B. oxygenated blood from the right ventricle to the lungs  
C. oxygenated blood from the left ventricle to the right auricle  
D. de-oxygenated blood from the left ventricle to the right auricle
55. Which of the following parts of the mammalian brain is involved in taking the decision to run rather than walk?

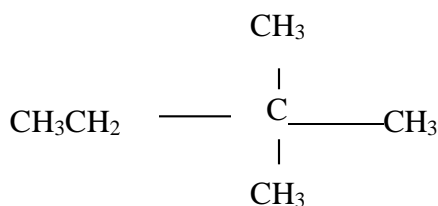
- A. Cerebellum  
C. Cranial nerves
56. Water rises most rapidly in  
A. Sandy soil.  
C. Sandy-loam soil
57. Euglena moves by:  
A. Whipping of its flagellum  
C. Rotating action of the flagella
58. The following life processes are common to both plants and animal except  
A. respiration  
C. reproduction
59. Which of the following statements is correct of hormones? Hormones are  
A. secreted into the blood through ducts  
C. inactive chemical substances in the blood stream
60. Which of the following statements is not associated with the theory of natural selection?  
A. there is a struggle for existence  
C. the weaker offspring are eliminated
61. Water is necessary for a germinating seed because it  
A. promotes aerobic respiration  
C. wets the soil for proper germination
62. The farming practice by which an exhausted land is left for a number of years before cultivation is known as  
A. crop rotation  
C. mono cropping
63. Which of the following instruments is used for determining the turbidity of the water?  
A. thermometer  
C. Rain Gauge.
64. The surest way to combine the best qualities of both parents in the offspring is by  
A. cross-breeding  
C. selective breeding
65. Which of the following is not true about gene mutation?  
A. it introduces new traits into a population  
C. is a source of new genes
66. In unicellular organisms, essential nutrients can be transported directly to all parts of the body by the process of diffusion only because unicellular organisms have:  
A. A large surface area to volume ratio  
C. Permeable cell membrane
67. Which of the following is not present in the nucleus of a cell?  
A. Chromosomes  
C. Mitochondrion
68. The structure in the cell that controls the movement of substance in and out of the cell is the  
A. Cytoplasmic membrane  
C. Cytoplasm
69. Which of these is not an excretory product of plant?  
A. Tannin  
C. Alkaloid
70. Which of the following processes will not introduce carbon dioxide into the atmosphere?  
A. Breathing  
C. Respiration
- B. Medulla oblongata  
D. Cerebrum
- B. Clayey soil  
D. Loamy soil
- B. Beating of its cilia  
D. pushing out a jet of water from an organelle
- B. growth  
D. photosynthesis
- B. secreted directly into the blood stream  
D. non-specific in their mode of action
- B. there is a competition among offspring  
D. Food and other needs are abundant
- B. activates the enzymes  
D. protects the seed from desiccation.
- B. continuous cropping  
D. bush fallowing
- B. Secchi Disc.  
D. Hygrometer
- B. in breeding  
D. all of the above
- B. causes changes in the DNA  
D. always affects the chromosome number
- B. A large volume to surface area ration  
D. Their body is always immersed in the nutrient material
- B. Nucleolus  
D. Genes
- B. Nuclear membrane  
D. Protoplasm
- B. Gum  
D. Sweat
- B. Photosynthesis  
D. Putrefaction

**CHEMISTRY**

- \_\_\_\_\_ are allotropes of carbon  
A. graphite and sulphur                      B. amorphous charcoal and coke  
C. diamond and graphite                      D. carbon monoxide and coke
- A substance is said to be hygroscopic if it \_\_\_\_\_  
A. does not absorb moisture                      B. is suspended in water  
C. dissolves when it absorbs moistures                      D. hydrolysis in water
- $\text{CH}_3\text{CO}_2\text{H} + \text{CH}_3\text{CH}_2\text{OH}$  ? The functional group under and in the equation is a/an \_\_\_\_\_ group  
A. Alkanol                      B. Carbonyl                      C. Keto                      D. Carboxylic acid
- The gas equation  $P_1V_1/T_1 = P_2V_2/T_2$  is made up of Charles' Law and \_\_\_\_\_ law  
A. Le Chateliers'                      B. Gay-Lussac's                      C. Boyle's                      D. Newton's
- The acid in butter is called \_\_\_\_\_ acid  
A. Butanonic                      B. Butyric                      C. Benzoic                      D. Butandioic
- The oxidation state of calcium is  $\text{CaCl}_2$  is \_\_\_\_\_  
A. +1                      B. +2                      C. +3                      D. +4
- The mass number of an atom of an element is the sum of its  
A. Electrons, neutrons and protons                      B. Electrons and protons  
C. Protons and neutrons                      D. Valence electrons
- The existence of two or more forms of the same element in the same physical state is known as.  
A. Allotropy                      B. Resonance                      C. Hybridization                      D. Isotopy
- In which of the following are radioactive isotopes used?  
A. Scientific research                      B. Dating techniques  
C. Treatment of cancer                      D. All of the above
- The phenomenon observed when dust particles collide randomly in a beam of sunlight is known as  
A. Tyndal effect                      B. Diffusion                      C. Osmosis                      D. Brownian movement
- The main characteristic features of transition metals are that they  
A. Have the same atomic size                      B. Are reducing agents  
C. Forms ions easily                      D. Have variable oxidation states
- In 1898, which scientist proposed that the atom is a sphere of positively charged matter in which negatively charged electrons are embedded  
A. Earnest Rutherford                      B. Max Planck                      C. J.J Thomson                      D. Robert Millikan
- Oxygen gas is collected in the laboratory by \_\_\_\_\_  
A. upward displacement of air                      B. upward displacement of water  
C. downward displacement of water                      D. using a gas layer
- $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$  In the reaction above CuO is \_\_\_\_\_  
A. oxidized to copper                      B. reduced to copper  
C. chemically converted to copper                      D. reversed to copper
- Isotopes are atoms of the same element with \_\_\_\_\_  
A. different protons                      B. mass above 50  
C. inter convertible masses                      D. different masses
- A reaction is in equilibrium when \_\_\_\_\_  
A. the rate of the forward reaction is equal to the rate of the reverse reaction  
B. the reaction rates of the forward and backward reaction are zero  
C. its rate is reversible  
D. it does not produce any product again
- The boiling point of a liquid such as methanol is the temperature at which its  
A. vapour pressure is equal to 1 atmosphere

- B. vapour pressure is equal to the atmospheric pressure  
C. reactants and products are at standard states  
D. vapour pressure doubles atmospheric pressure
18. Alkenes and \_\_\_\_\_ are compounds that contain a multiple bond each  
A. Alkanes      B. Benzene      C. Alkynes      D. Benzaldehyde
19. A palm fruit dropped to the ground from the top of a tree 45m tall, how long does it take to reach the ground? (take  $g=10\text{ms}^{-2}$ )  
A. 1s      B. 2s      C. 3s      D. 5s
20. \_\_\_\_\_ is due to the formation of hydrogen gas bubbles around the copper plate of a simple cell  
A. polarization      B. depolarization      C. local action      D. amalgamation
21. Which of the following can be explained by the kinetic theory?  
I. The physical state of matter      II. Diffusion of gases  
III. Melting of solid      IV. Evaporation of liquids  
A. IV      B. I & II      C. III & IV      D. I, II & III      E. I, II, III & IV
22. The properties of electrovalent compounds include the following except  
A. High melting point and boiling point  
B. Conduction of electricity in the molten state  
C. High volatility at room temperature  
D. Ionization in aqueous solution
23. Which of the following statements is not corrected about electrolysis?  
A. Reduction occurs at the anode  
B. Anions migrate to the anode  
C. Positive ions migrate to the cathode  
D. Concentration affects the discharge of ions
24. Separation of mixtures of solids by physical methods can be based on differences in the following except  
A. Melting point  
B. Solubility  
C. Particle size  
D. Molar mass
25. The following are major gaseous pollutants except.  
A. CO      B. CO<sub>2</sub>      C. SO<sub>2</sub>      D. CFC
26. Brass is an alloy containing copper and  
A. zinc      B. tin      C. silver      D. lead
27. Which of the following reduces the activation energy of a chemical reaction?  
A. freezing mixture      B. reducing agent  
C. water      D. catalyst
28. In the electrolysis of brime, the anode is  
A. carbon      B. platinum      C. zinc      D. copper
29. What current in ampere will deposit 0.27g of aluminium in 2 hours? [Al=27, F=96500C].  
A. 3.2      B. 8      C. 0.4      D. 16
30. What is the likely formula of a compound formed between element M in group 2 and between element X in group 7?  
A. M<sub>7</sub>X<sub>2</sub>      B. MX<sub>2</sub>      C. M<sub>2</sub>X<sub>7</sub>      D. M<sub>2</sub>X
31. Which of the following can be explained by the kinetic theory?  
I. The physical state of matter      II. Diffusion of gases      III. Melting of solid      IV. Evaporation of liquids  
A. IV      B. I & II      C. III & IV      D. I, II & III      E. I, II, III & IV
32. The properties of electrovalent compounds include the following except  
A. High melting point and boiling point      B. Conduction of electricity in the molten state  
C. High volatility at room temperature      D. Ionization in aqueous solution  
E. Decomposition of their solutions by electric current

33. Which of the following statements is not correct about electrolysis?  
A. Reduction occurs at the anode    B. Anions migrate to the anode  
C. Positive ions migrate to the cathode    D. Concentration affects the discharge of ions  
E. Electrolysis conduct electric current
34. Separation of mixtures of solids by physical methods can be based on differences in the following except  
A. Melting point    B. Solubility    C. Particle size    D. Molar mass
35. The following are major gaseous pollutants except.  
A. CO    B. CO<sub>2</sub>    C. SO<sub>2</sub>    D. CFC
36. The ration of reactants to products is 1: 3: 2 in the reaction represented by the equation below: N<sub>2(g)</sub> + 3H<sub>2(g)</sub> → 2NH<sub>3(g)</sub> which of the following laws is demonstrated by this?  
A. Boyle's law    B. Law of multiple proportion  
C. Gay Lussac's law    D. Law of constant composition
37. PH of a 0.0001M acid is  
A. 1    B. 2    C. 3    D. 4
- 38.38.



How many isomers of the compound above can be obtained?

- A. 5    B. 4    C. 3    D. 2
39. Alkanoates are produced from alkanols by  
A. Esterification    B. Fermentation  
C. Saponification    D. Oxidation
40. Esters are employed in the following except  
A. Making perfumes    B. Nail vanisher  
C. Making solvent for cellulose trioxonitrate(V)    D. Making cement
41. What mass of anhydrous sodium trioxocarbonate(IV) is present in 500cm<sup>3</sup> of 0.1mol dm<sup>-3</sup> of the solution [Na=23, C=12, O=16]  
A. 10.6g    B. 106g  
C. 5.3g    D. 53g
42. The oxidation state of oxygen in tetraoxosulphate(IV) acid is  
A. -4    B. +4  
C. -2    D. +2
43. Metals of the first transition series have special properties which are different from those of groups I and II elements because they have partially filled  
A. S orbital    B. P orbital    C. D orbital    D. F orbital
44. Separation of different carotenes from carrot root uses a method  
A. centrifugation    B. Distillation    C. chromatography  
D. carotinzation

45.45.

Solution	W	X	Y	Z
Ph	8	12	4	2

From the table, which of the solutions W, C, Y and Z will liberate carbon (IV) oxide from a trioxocarbonate (IV) salt?

- A. Z    B. Y    C. W  
D. X
46. 50cm<sup>3</sup> of a saturated solution of KNO<sub>3</sub> at 40°C contained 5.05g of the salt. What is the solubility of KNO<sub>3</sub> at 40°C [K=39, N=14, O=16]  
A. 1.0moldm<sup>-3</sup>    B. 1.5moldm<sup>-3</sup>    C. 2.0moldm<sup>-3</sup>  
D. 5.0moldm<sup>-3</sup>

47. A brand of ink containing cobalt (III), copper (II) and iron(II) ions can best be separated into its various components by  
A. fractional crystallization B. fractional distillation C. sublimation D. chromatography
48. If the rate law obtained for a given reaction is given as rate =  $K[X]^n [Y]^m$ , what is the overall order of the reaction.  
A. nm B.  $n_m$  C. n+m D. n-m
49. A molecular formula shows \_\_\_\_\_ in a molecule  
A. the elements present B. the number of atoms of each element  
C. cations and anions D. chemical symbols and number of atoms
50. Give the total mass of copper in 1gm of copper (II) sulphate  
[Cu = 40; S = 32; O = 16]  
A. 0.25g B. 0.50g C. 10g D. 2.5g
51.  ${}_{55}^{114}\text{Cs} \longrightarrow {}^A_Z\text{E} + {}^4_2\alpha$   
Find the value of A and Z in the equation above  
A. 119, 53 B. 110, 57 C. 110, 53 D. 110, 58
52. How many moles of H<sub>2</sub> molecules are needed to convert 5 mol of O<sub>2</sub> molecules to water?  
A. 5 mol H<sub>2</sub> B. 10 mol H<sub>2</sub> C. 15 mol H<sub>2</sub> D. 20 mol H<sub>2</sub>
53.  ${}_{88}^{226}\text{Ra} \rightarrow {}_{86}^X\text{Rn} + \alpha$ . What is the value of X in the nuclear reaction above?  
A. 220 B. 222 C. 226 D. 227.
54. When naphthalene on heating changes from solid state directly to the gaseous state, it undergoes  
A. sublimation B. evaporation C. combustion D. decomposition
55. Which of the following is an electrolyte?  
A. alcohol B. sodium ethanoate C. solid potassium hydroxide D. mercury
56. The equation  ${}_{7}^{14}\text{N} + {}_{2}^{4}\text{He} \rightarrow {}_{8}^{17}\text{O} + {}_{1}^{1}\text{P}$  represents.  
A. nuclear fusion B. nuclear fission  
C. artificial radioactivity D. nuclear fission using positron
57. Which of the following is a general method of preparing acids?  
A. Direct combination of constituent elements B. Double decomposition involving a salt solution  
C. Reaction between an anhydride and water D. Reaction between a base and an amphoteric oxide  
E. Dissolution of hydroxides followed by neutralization
58. Monosaccharides are  
A. hydrolysable B. non-hydrolysable C. not soluble in water D. sweet but sometimes non sugary
59. The major air pollutants that can result from smoky vehicles include  
A. Acid fumes B. Hydrogen sulphide  
C. Carbon (II) oxide D. Carbon particles
60. If an element has the electronic configuration  $1s^2, 2s^2, 2p^6, 3s^2, 3p^4$ , it is  
A. metal B. An alkaline earth metal  
C. An S-block element D. A P-block element
61. Compounds that have the same molecular formula but different structures are said to be  
A. Allotropic B. Isotopic  
C. Polymeric D. Isomeric
62. Which of the following statements is not correct?  
A. Carbon exhibits allotropy B. Sulphur exhibits allotropy  
C. Chlorine exhibits allotropy D. Hydrogen is a gas
63. 300cm<sup>3</sup> of a gas has a pressure 400mmHg. If the pressure is reduced to 150mmHg. Find its volume.  
A. 700cm<sup>3</sup> B. 800cm<sup>3</sup>

C.  $350\text{cm}^3$

D.  $112.5\text{cm}^3$

64. The ideal gas equation can be written as

A.  $\frac{V_1}{T_1} = \frac{V_2}{T_2}$

B.  $P_1 V_1 = P_2 V_2$

C.  $V_2 = \frac{P_1 V_1 T_1}{P_2 T_2}$

D.  $P_1 V_1 T_2 = P_2 V_2 T_1$

65. Ethyne, Ethene, Cyclohexane and Propene can be classified as \_\_\_\_\_

A. alkenes

B. aromatic compounds

C. saturated compounds

D. multiple bond hydrocarbons

66. If the PH of a compound is 3.2 that compound is \_\_\_\_\_

A. Amphoteric

B. A Salt

C. An Acid

D. A Base

67. Which is the most ionic in the group below

A. Cl<sub>2</sub>

B. NaCl

C. AlCl<sub>3</sub>

D. CaCl<sub>2</sub>

68. Hydrogenation of palm oil results in a solid compound called

A. candle

B. solid palm oil

C. palm oil

D. ester

69. An Amphoteric compound \_\_\_\_\_

A. Reacts with alcohols

B. Reacts both as an acid and as a base

C. It is solid at room temperature

D. has a PH of 7

70. In structural isomerism same atoms are linked to \_\_\_\_\_

A. carbon atoms

B. similar atoms

C. different neighbouring atoms

D. different functional groups

**PHYSICS**

- The weakest form of bonding in materials is  
**A. Ionic      B. Metallic      C. Covalent      D. Van der Waals**
- The period of a simple pendulum oscillating in a vacuum depends on  
**A. The mass of the pendulum      B. The length of the pendulum  
C. The acceleration due to gravity      D. The volume of the pendulum**
- Which one of the following phenomenon cannot be explained by the wave theory of light?  
**A. Refraction      B. Interference      C. Diffraction      D. Photoelectric effect**
- Which of these best describes the power of a lens  
**A.  $P = 1/f$       B.  $P = f/\mu$       C.  $P = f\lambda$       D.  $P = f\mu$**
- Which of the following attributes of a machine does not depend on friction?  
(1) Mechanical advantage (2) Velocity ratio (3) Efficiency  
**A. 1 only      B. 2 only      C. 3 only      D. 1 and 2 only**
- A cell is a device which converts  
**A. Kinetic energy to potential energy      B. Sound energy to electrical energy  
C. Chemical energy to heat energy      D. Chemical energy to electrical energy**
- In which of the following media would sound waves travel fastest  
**A. kerosene      B. alcohol      C. water      D. iron**
- Which of the following is not a use of plain mirrors  
**A. as wing mirrors on cars      B. as a looking glass  
C. in a periscope      D. in a kaleidoscope**
- If  $V$  is the velocity of a wave,  $\lambda$  is its wavelength and  $T$  its period. The  $V$ ,  $\lambda$  and  $T$  are related by the expression  
**A.  $\lambda = V/T^2$       B.  $V = \lambda T$       C.  $\lambda = VT$       D.  $T$**
- Three 3.0 ohm resistors are connected in parallel. What is the equivalent resistance?  
**A. 9.0 ohm      B. 1.0 ohm      C. 6.0 ohm      D. 3.0 ohm**
- The distance between two successive crest or trough is  
**A. amplitude      B. wavelength      C. frequency      D. wave distance**
- An object is placed 15cm in front of a convex mirror and an image is produced 5cm behind the mirror, calculate the focal length of the mirror  
**A. -7.5cm      B. 10cm      C. 7.5cm      D. 20cm**
- A ball is projected horizontally at 15m/s from a point 20m above a horizontal surface ( $g=10\text{m/s}^2$ ). The magnitude of its velocity in m/s when it hits the surface is  
**A. 10      B. 15      C. 20      D. 25**
- A malaria patient has a body temperature of 39.5°C. Convert this temperature to °F.  
**A. 83.2°F      B. 103.1°F      C. 77.4°F      D. 147.**
- Positive charges usually move from  
**A. Higher to lower potential areas      B. Lower to higher potential areas  
C. North to south      D. Higher resistance to lower resistance areas**
- A truck traveling with a velocity of 40m/s applies the brakes and comes to a halt after 20 seconds. What is distance traveled by the truck before coming to a halt  
**A. 40m      B. 800m  
C. 400m      D. 10m**
- In a harmonic oscillation of a simple pendulum, one of the following statements is correct  
**A. The potential energy and the kinetic energy of the bob are equal at all times  
B. The potential energy is equal to the kinetic energy at the central position of the oscillation  
C. The potential and the kinetic energies of the bob are maximum at the maximum height of the oscillation  
D. None of the above**
- If the linear expansivity of a metal rod is  $4 \times 10^{-5}$  per °C, what will be the new length of the rod if it is heated from 15°C to 95°C from its original length of 20cm  
**A. 0.064 cm      B. 0.64 cm  
C. 20.64 cm      D. 20.064 cm**

19. The heat required to melt ice at 0°C to water at the same temperature is called  
A. Apparent heat of fusion    B. Apparent heat of vaporization  
C. Latent heat of vaporization    D. Latent heat of fusion
20. Which of the following is used in a nuclear reactor to slow down fast moving electrons?  
A. Carbon dioxide gas  
B. Liquid sodium metal  
C. Concrete shield  
D. Graphite rods.
21. Calculate the power-rating of a heating element which melted in 20g of ice at 0°C and raised the temperature of the resulting water to 60°C in 2 minutes  
*Specific latent heat of fusion of ice = 340 J/g*  
*Specific heat capacity of water = 4.2 J/g°C*  
A. 5.92kw    B. 98.6w    C. 107w    D. 42w
22. If a man cannot see objects very close to him the following can be used to correct the problem.  
A. Convex lens    B. Convex mirror    C. Concave lens    D. Concave mirror
23. When the bob of a simple pendulum is at its highest displacement, one of the following happens:  
A. kinetic energy is maximum    B. potential energy is maximum  
C. total energy is zero    D. momentum is maximum
24. When the atmospheric pressure is very low in a given location, boiling point of water:  
A. increases    B. decreases    C. remains    D. cannot boil
25. Which of these statements is correct about cathode rays. They are fast moving  
A. atoms    B. neutrons    C. electrons    D. ions
26. Which of the following has the highest surface tension.  
A. soapy water    B. cold water  
C. warm water    D. Salt water
27. A truck traveling with a velocity of 40m/s applies the brakes and comes to a halt after 20 seconds. What is the distance traveled by the truck before coming to a halt  
A. 40m    B. 800m    C. 400m    D. 10m
28. If the linear expansivity of a metal rod is  $4 \times 10^{-5}$  per °C, what will be the new length of the rod if it is heated from 15°C to 95°C from its original length of 20cm  
A. 0.064 cm    B. 0.64 cm    C. 20.64 cm    D. 20.064 cm
29. 44KJ of heat was used in raising the temperature of 2kg of paraffin oil from 360K to 370K. Calculate the specific heat capacity of paraffin oil  
A. 2.2 J/kg/K    B.  $2.2 \times 10^3$  J/kg/K    C.  $2.2 \times 10^5$  J/kg/K    D. 220 J/kg/K
30. A simple machine overcomes a load of 4000N when a force of 200N is applied. If the velocity ratio of the machine is 25, calculate the efficiency of the machine?  
A. 1.25%    B. 80%    C. 125%    D. 0.8%
31. A long sighted person is to read a book held at a distance of 20cm from the eyes. Which of the following will the person require to read the book with ease?  
A. Nothing    B. Concave lens    C. Convex lens    D. Concave mirror
32. An object at the bottom of a pool of liquid 10m depth is seen by an observer as if it is at 8m depth. What is the refractive index of the liquid  
A. 0.25    B. 0.20    C. 1.25    D. 0.8
33. Which of the following has the highest surface tension?  
A. soapy water    B. cold water    C. warm water    D. Salt water
34. The emf developed in a circuit is directly proportional to the rate of change of magnetic flux. The above was a finding from  
A. Maxwell    B. Faraday    C. Ampere    D. Lenz
35. Which of the following is stored by a dry leclanche cell?  
A. Chemical energy    B. Solar energy    C. Electrical energy    D. Heat energy
36. A ball is projected horizontally from the top of a hill with a velocity of 20m/s. if it reaches the ground 4 seconds later. What is the height of the hill? ( $g=10\text{m/s}^2$ ).  
A. 200m    B. 20m    C. 160m    D. 40m



54. A piece of aluminium of mass 0.5kg at a temperature of 100°C is placed in water of mass 0.4kg at a temperature of 10°C. If the final temperature of the mixture is 40°C. Find the specific heat capacity of aluminium if that of water is 4200J/Kg/°C  
A. 960J/Kg/°C                      B. 908J/Kg/°C                      C. 1860J/Kg/°C                      D. 1680J/Kg/°C
55. Hardness of X-rays is a measure of its  
A. Intensity   B. Density                      C. Penetration power                      D. Picture it produces
56. The half life of a radioactive substance is 2 seconds. Calculate the decay constant  
A. 0.035s                      B. 0.347s                      C. 0.151s                      D. 0.576s
57. A body moves with a constant speed but has an acceleration. This is possible if it  
A. moves in a straight line   B. moves in a circle                      C. is oscillating                      D. is in equilibrium
58. A 500kg truck moving with a velocity of 6m/s collides with a stationary 100kg car. The truck and the car move together after collision. What is their common velocity?  
A. 5m/s                      B. 10m/s                      C. 30m/s                      D. 1m/s
59. The process by which a metal heated to a high temperature gives off electrons from its surface is known as:  
A. radioactive emission                      B. field emission  
C. photoelectric emission                      D. thermionic emission
60. A total internal reflection occurs in the glass-air boundary when the angle of incidence is  
A. greater than the right angle                      B. greater than critical angle  
C. greater than angle of prism                      D. greater than angle of deviation
61. At what temperature will the Celsius scale coincide with the Fahrenheit scale?  
A. 4°                      B. -273°                      C. 100°                      D. -40°
62. Which of these statements is correct about cathode rays. They are fast moving  
A. atoms                      B. neutrons                      C. electrons                      D. ions
63. The upthrust experienced by an object immersed in a fluid makes the object feel  
A. Heavier                      B. Lighter                      C. sink lower                      D. none of the above
64. Which of the following has the highest surface tension.  
A. soapy water                      B. cold water  
C. warm water                      D. Salt water
65. Which of these is NOT a consequence of hydrogen bubbles covering the upper plate of a primary cell?  
A. Polarization                      B. Local action  
C. Generation of less current by the cell                      D. Increase in the resistance of the cell.
66. What is the current in a circuit if the charge of 240 coulombs pass each point in 2 minutes  
A. 120 A                      B. 480 A                      C. 4 A                      D. 2 A
67. An electric in Nigeria has a number of 60w coloured bulb. How many can be connected to a 240V supply through a 5A fuse  
A. 20                      B. 48                      C. 5                      D. 4
68. A radio station broadcasts on a frequency of 100MHz. If the speed of the radio wave is  $3 \times 10^8$ m/s, what is the wavelength of the radio wave from this station  
A.  $3 \times 10^6$ m                      B.  $3 \times 10^3$ m                      C. 300m  
D. 3m
69. If you need to clearly see an object that is at a very far distance, then you need to use  
A. periscope                      B. microscope  
C. telescope                      D. prismscope
70. Michael Faraday found that the EMF developed across a conductor is directly proportional to the  
A. current applied                      B. voltage applied  
C. rate of change of magnetic flux                      D. rate of change of electric flux

**COMPUTER**

1. The following are output devices except:  
**A. Mouse B. Plotter C. Printer D. Speakers E. Monitor**
2. What type of device is a computer monitor?  
**A. Input B. Output C. Software D. Storage E. Processing**
3. What type of device is a computer keyboard  
**A. Input B. Output C. Software D. Storage E. Processing**
4. What type of devices are computer speakers or headphones?  
**A. Input B. Output C. Software D. Storage E. Processing**
5. What type of device is a computer printer?  
**A. Input B. Output C. Software D. Storage E. Processing**
6. What type of device is a 3 1/2 inch floppy drive?  
**A. Input B. Output C. Software D. Storage E. Processing**
7. What type of device is a computer mouse?  
**A. Input B. Output C. Software D. Storage E. Processing**
8. What type of devices are CDs or DVDs?  
**A. Input B. Output C. Software D. Storage E. Processing**
9. What type of device is a digital camera?  
**A. Input B. Output C. Software D. Storage E. Processing**
10. A program that can copy itself and infect a computer without the permission or knowledge of the owner is called what?  
**A. Floppy B. Virus C. Java D. Monitor E. Flash**
11. Which of these is a correct format of IP address?  
**A. 192.168.1.1 B. 192.168.111.1111 C. 192.168.900.1 D. 192.900.168.1 E. 192.16.168.111**
12. Which was the first web browser?  
**A. WorldWideWeb B. Netscape Navigator C. Internet Explorer D. Safari E. Chrome**
13. It is a small piece of text stored on a user's computer by a web browser for maintaining the state. What we are talking about?  
**A. Application B. Session C. Cookie D. QueryString E. Applets**
14. Which of these is a correct format of Email address?  
**A. contact.website.info B. contactwebsite.info C. contact@website.info D. contact@website@info E. Contact.website@info**
15. What does HTTP stands for?  
**A. Hypertext Transfer Protocol B. Hypertext Transfer Plotter C. Head Tail Transfer Plot D. Head Tail Transfer Protocol E. Hypertext Transmission Process**
16. In computers, what is the smallest and basic unit of information storage?  
**A. Bit B. Byte C. Newton D. Mega byte E. Kilo byte**
17. What is Windows XP?  
**A. Operating System B. Storage Device C. Processor D. Output Device E. Input Device**
18. Which of the following is responsible for the management and coordination of activities and the sharing of the resources of the computer?  
**A. Application Software B. Motherboard C. Operating System D. RAM E. System Software**
19. MP3 file format is associated with what type of files?  
**A. Video B. Audio C. Image D. Word Document E. Flash file**
20. MS-Word is an example of  
**A. Application Software B. System Software C. Operating System D. Scanner E. ALU**
21. Which software application is used for accessing sites or information on a network (as the World Wide Web)?  
**A. Operating System B. Web Browser C. Microsoft Word D. Microsoft Excel E. FileZilla**
22. What are the two broad categories of software?  
**A. MS Word and Spreadsheet B. Transaction and Application C. Microsoft and Mac OS D. System and Application E. Transaction and System**

23. One kilobyte contains how many bytes?  
**A. 1000 B. 1001 C. 100 D. 1024 E. 10**
24. Who Owns the Internet?  
**A. Internet Engineering Task Force B. ICANN C. Internet Architecture Board  
D. No one owns it E. InterNIC**
25. What is the shortcut key of printing a document for computer having windows?  
**A. Ctrl + P B. Shift + P C. Alt + P D. Shift + PP E. Fn + P**
26. In computers, '.TMP' extension refers usually to what kind of file?  
**A. Temporary file B. Image file C. Video file D. Text file E. Database file**
27. The way of manipulating data into information is called  
**A. Storing B. Processing C. Deletion D. Organizing E. Transmission**
28. What Does BIOS Stand For?  
**A. Better Integrated Operating System B. Basic Input Output System  
C. Battery Integrated Operating Setup D. Backup Input Output System  
E. Battery Input Operating System**
29. Memory management is a feature of  
**A. Processor B. Operating System C. MS Word D. Animation E. UPS**
30. Which of the following is not a storage device?  
**A. DVD B. Hard Disk C. Floppy Disk D. Mouse E. Flash Drive**

**ANSWERS**

**ENGLISH**

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

53. B
54. C
55. D
56. D
57. B
58. B
59. C
60. A
61. C
62. B
63. C
64. A
65. D
66. C
67. B
68. C
69. A
70. D
71. B
72. B
73. D
74. B
75. C

**MATHEMATICS**

1. D
2. B
3. D
4. B
5. D
6. A
7. C
8. D
9. B
10. D
11. D
12. D
13. D
14. D
15. C
16. C
17. A
18. C
19. B
20. D
21. D
22. D
23. B
  
24. A
25. C

26. C
27. E
28. C
29. D
30. C
31. A
32. B
33. B
34. D
35. B
36. A
37. C
38. D
39. C
40. A
41. B
42. C
43. D
44. C
45. B
46. D
47. C
48. A
49. B
50. D
51. A
52. B
53. C
54. B
55. C
56. B
57. C
58. D
59. D
60. B
61. B
62. C
63. D
64. C
65. B
66. C
67. C
68. A
69. D
70. B

**BIOLOGY**

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

- 52. A
- 53. D
- 54. A
- 55. D
- 56. A
- 57. A
- 58. D
- 59. B
- 60. D
- 61. B
- 62. D
- 63. B
- 64. A
- 65. D
- 66. A
- 67. C
- 68. A
- 69. D
- 70. B

**CHEMISTRY**

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

- 50. A
- 51. C
- 52. B
- 53. C
- 54. A
- 55. B
- 56. C
- 57. A
- 58. B
- 59. C
- 60. D
- 61. D
- 62. C
- 63. B
- 64. D
- 65. D
- 66. C
- 67. B
- 68. C
- 69. B
- 70. C

**PHYSICS**

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

- 50. A
- 51. C
- 52. B
- 53. A
- 54. D
  
- 55. C
- 56. B
- 57. B
- 58. A
- 59. D
- 60. B
- 61. D
- 62. C
- 63. B
- 64. B
- 65. B
- 66. D
- 67. A
- 68. D
- 69. C
- 70. C

**COMPUTER**

1. A
2. B
3. A
4. B
5. B
6. D
7. A
8. D
9. A
10. B
11. A
12. A
13. C
14. C
15. A
16. A
17. A
18. C
19. B
20. A
21. B
22. D
23. D
24. D
25. A
26. A
27. B
28. B
29. B
30. D