1.Morse code allows you to encode characters for messages on the radio by specifying a combination of dots and dashes. How many different characters can be encoded using Morse code of at least four and no more than five signals (dots and dashes)?

A) 16

B) 48

C) 32

D) 64

E) 256

2.Morse code allows you to encode characters for messages on the radio by specifying a combination of dots and dashes. How many different characters can be encoded using Morse code of at least three and no more than four signals (dots and dashes) ?

A) 8

B) 16

C) 32

D) 24

E) 64

3.The chessboard consists of 8 columns and 8 lines.

What is the minimum number of bits required to encode the coordinates of one chess cell?

A) 8

B) 64

C) 16

D) 1

E) 6

4.Some signaling device transmits one of three signals in one second.

How many different messages can you send in five seconds using this device ?

A) 3

B) 5

C) 125

D) 243

E) 15

5.Some alphabet contains 4 different symbols. How many three-letter words can be composed of the symbols of this alphabet, if the symbols in the word can be repeated?

A) 4

B) 16

C) 64

D) 12

E) 81

6.Some alphabet contains three different letters. How many three-letter words can be composed of the letters of the alphabet (the letters in the word can be repeated)?

A) 3

B) 27

C) 9

D) 729

E) 6

7.Some alphabet contains three different letters. How many four-letter words can be made up from the letters of the alphabet ( the letters in the word can be repeated)?

A) 81

B) 64

C) 12

D) 16

E) 9

8.The light panel consists of light bulbs. Each light bulb can be in one of three states ("on", "off" or "flashing"). What is the smallest number of bulbs that should be on the light panel so that it can transmit 18 different signals ?

A) 18

B) 6

C) 9

D) 54

E) 3

9.How many words of length 5 can be composed of the letters E, F, A?

Each letter can enter in the word several times.

A) 125

B) 15

C) 3

D)243

E) 5

10.How many different symbolic sequences of length from three to four exist in the four-letter alphabet {A, C, G, T}?

A) 64

B) 256

C) 320

D) 480

E) 512

11.Some alphabet contains three different letters. How many five - letter words can be composed of the letters of the alphabet ( letters in the word can be repeated)?

A) 125

B) 243

C) 5

D) 3

E) 15

12.The meteorological station observes the humidity of the air. The result of one observation is an integer number from 0 to 100%, written using the minimum possible number of bits. The station made 800 measurements. Determine the information volume of the results of observations. ( Give the answer in bytes.)

A) 700 байт.

B) 800 байт.

C) 100 байт.

D) 1000 байт.

E) 5 байт.

13.In the cyclocross ( Bicycle Crossing ) 276 athletes participate.

A special device registers the passage by each of the participants of the intermediate finish. The device records its number using the minimum possible number of bits, the same for each of the participants. What amount of memory will be used by the device, when 240 cyclists passed the intermediate finish? ( Give the answer in b ytes.)

A) 120 байт.

B) 270 байт.

C) 276 байт.

D) 240 байт.

E) 18 байт.

14.Choose variant in which capacities of memory are arranged in increasing order

A)10 bits, 2 bytes, 20 bits, 1010 bytes, 1 Kb  
B) 10 bits, 20 bits, 2 bytes, 1 Кb, 1010 bytes  
C) 10 bits, 20 bits, 2 bytes, 1010 bytes, 1 Кb  
D) 10 bits, 2 bytes, 20 bits, 1 Кb, 1010 bytes

E) 15 bits, 10 bytes, 1 bits ,2 bytes, 1 byte

15.Choose variant in which capacities of memory are arranged in decreasing order

A)**1 КB, 1010 bytes, 20 bits, 2 bytes, 10 bits**B) 1010 bytes, 1 КB, 20 bits, 2 bytes, 10 bits  
C) 1010 bytes, 1 КB, 2 bytes, 20 bits, 10 bits  
D) 1010 bytes, 2 bytes, 1 КB, 20 bits, 10 bits

E) 1 Мb, 2 GB, 10 МB ,1 Tb

16.There are balls in the basket. All balls have a different color. The message that the blue ball is taken out of the basket carries 5 bits of information. How many balls are in the basket?

A) 5

B) 10

C) 16

D) 32

E) 64

17.64 balls are played in the lottery. A winning combination consists of X balls, and the message about it carries 42 bits of information. What is X equal to?

A) 7

B) 2

C) 42

D) 64

E) 128

18.A message written in the letters of a 64-character alphabet contains 20

characters. How much information does it carry?

A) 64 bits

B) 20 bytes

C) 120 bits

D) 64 bytes

E) 1280 bits

19.There is a message that the number in the range of integers from 684 to 811 was guessed.

How much information does the message carry?

A) 6 bits

B) 7 bits

C) 127 bits

D) 128 bits

E) 256 bits

20.The book consists of 64 pages. There are 256 characters on each page.

The alphabet used consists of 32 characters. How much information does the book contain?

A) 81 920 bytes

B) 40 Кbytes

C) 16 Кbytes

D) 10 Кbytes

E) 18 Кbytes

21.How many bits are in the word informatics?

(The ASCII encoding system is used)

A) 1

B) 11

C) 44

D) 22

E) 88

22.In the Unicode encoding, each character is coded with 16 bits.

What is the information volume of the next message?

2+2=4, & 5+5=10.

A)16 bits

B) 256 bits

C) 12 bytes

D) 32 bytes

E) 16 bytes.

23.Two texts contain the same number of characters. The first text is composed in an alphabet with a capacity of 16 characters. The second text is composed of an alphabet with a capacity of 256 characters. How many times is the amount of information in the second text larger than in the first?

A) 2

B) 4

C) 8

D) 16

E) 32

24.Text document, consisting of 3072 characters, stored in the 8-bit code of KOI-8.

This document has been converted to a 16-bit Unicode encoding.

Specify which additional KB is needed to store the document.

A) 2 Кбайта

B) 4 Кбайта

C) 8 Кбайтов

D) 5 Кбайтов

E) 3 Кбайта