Class- 4

BIOLOGY

UPSC -2023

Consider the following statements:

1.Some microorganisms can grow in environments with temperature above the boiling point of water.

2. Some microorganisms can grow in environments with temperature below the freezing point of water.

3. Some microorganisms can grow in highly acidic environment with a pH below 3.

How many of the above statements are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

Fungal diseases

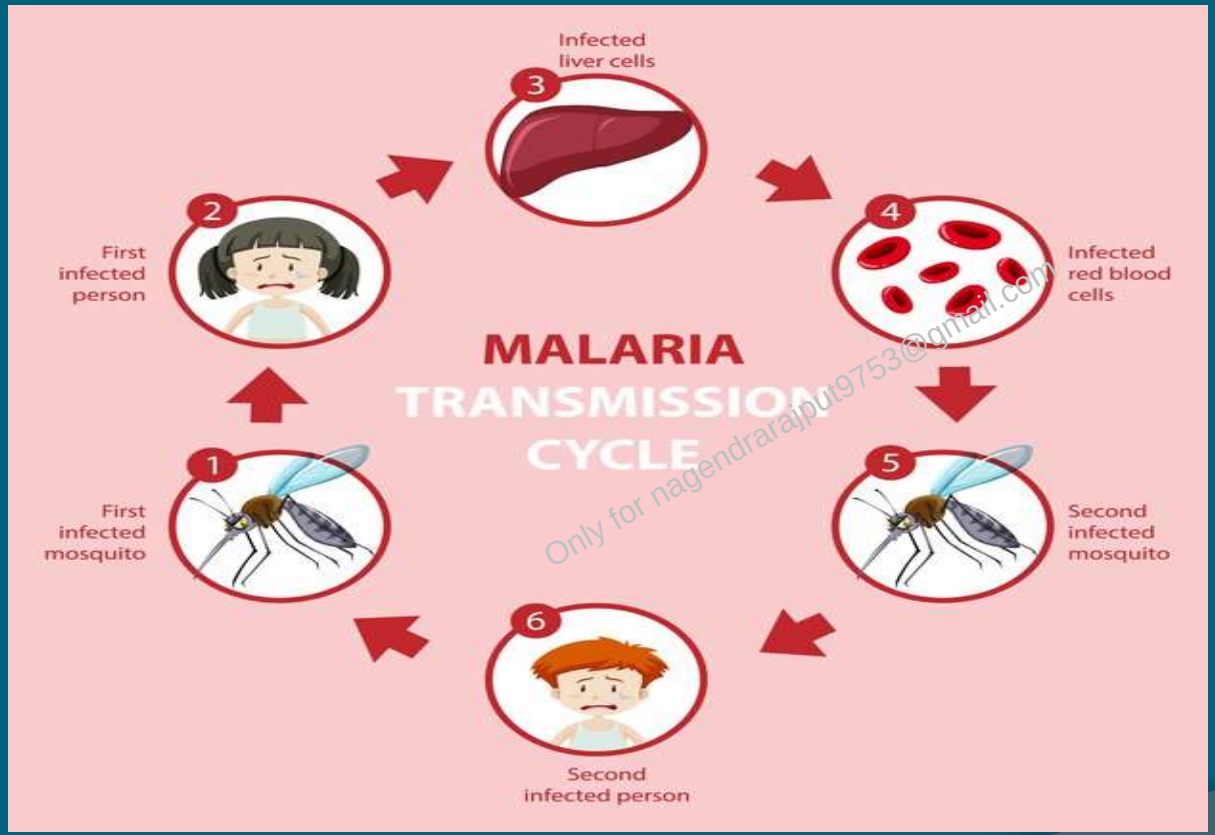
- Candidiasis
- Ringworm
- Athlete’s foot

Helminthic diseases

- Ascariasis
- Taeniasis
- Lymphatic filariasis
- Hookworm infection

Protozoan Disease

- Amoebiasis
- Giardiasis
- Malaria



Viral diseases

- Hepatitis
- Chicken pox
- Polio
- Dengue
- Zika
- Chikungunya
- AIDS

Which of the following statements is / are correct?

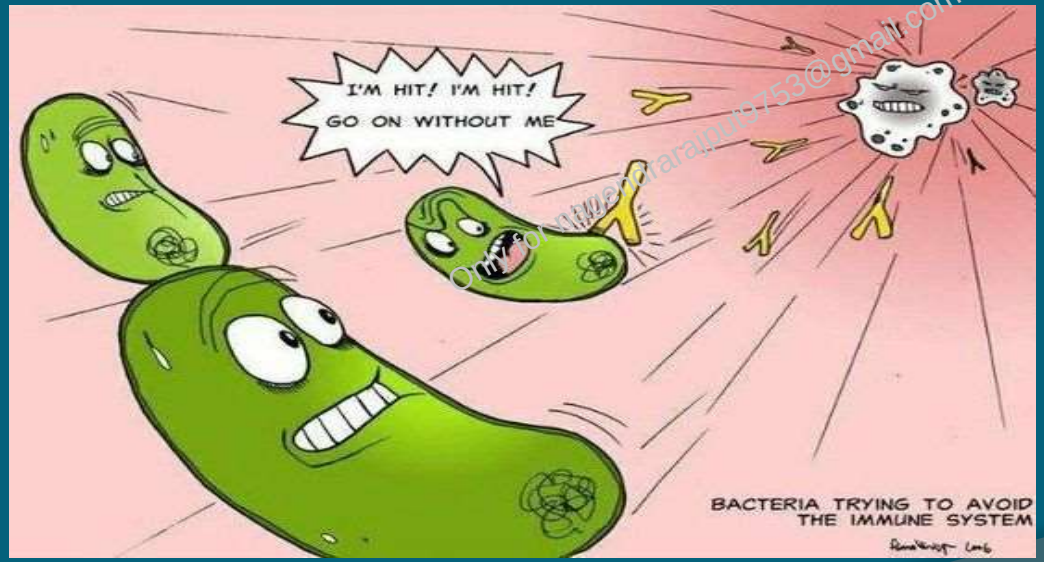
1. Viruses lack enzymes necessary for the generation of energy.
2. Viruses can be cultured in any synthetic medium.
3. Viruses are transmitted from one organism to another by biological vectors only.

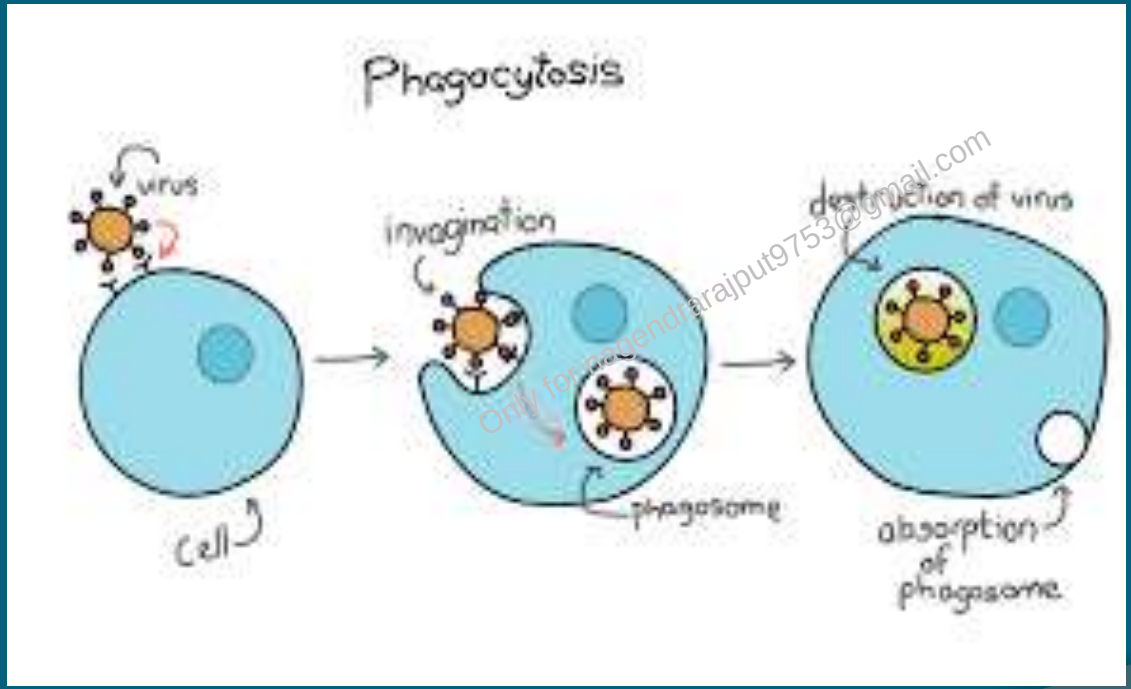
Select the correct answer using the codes given below.

(a) 1 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Immunity

Antigen- Antibody





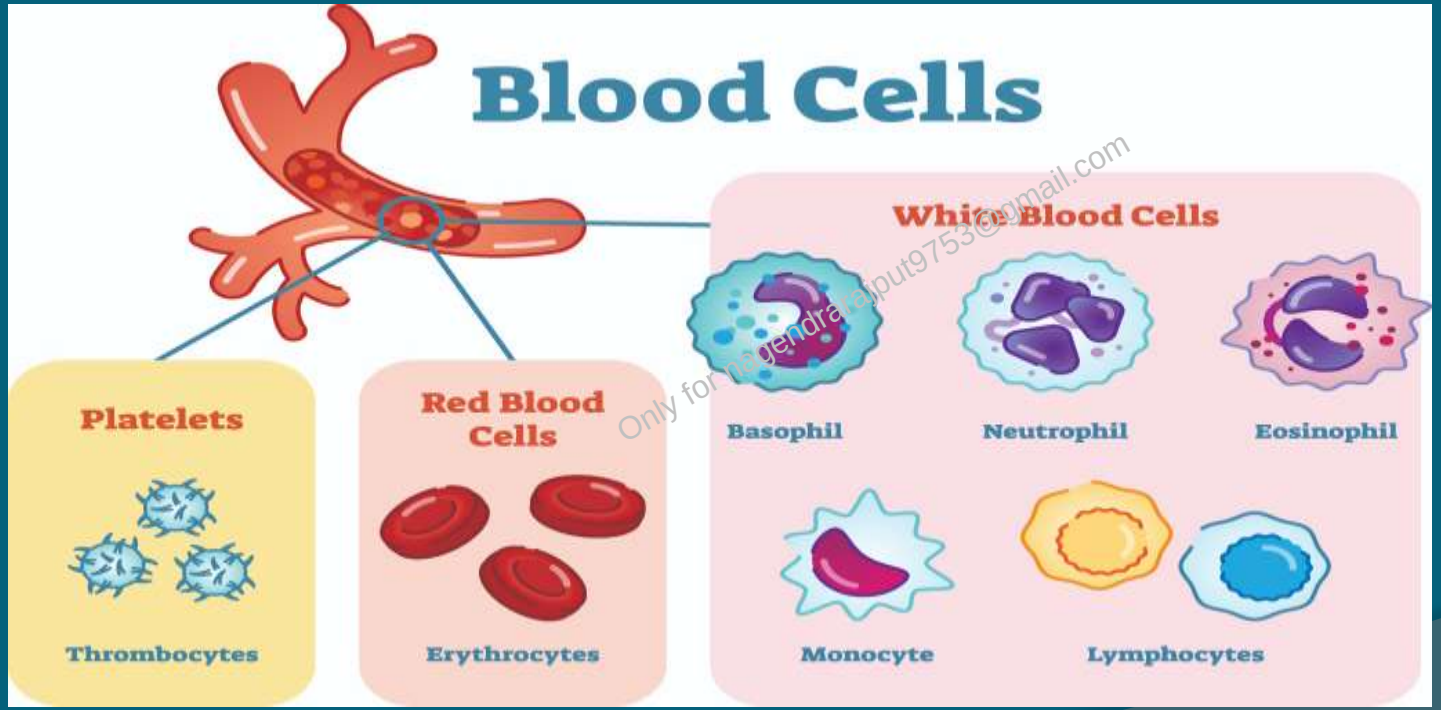
Widespread resistance of malarial parasite to drugs like chloroquine has prompted attempts to develop a malarial vaccine to combat malaria. Why is it difficult to develop an effective malaria vaccine ?

(a) Malaria is caused by several species of Plasmodium

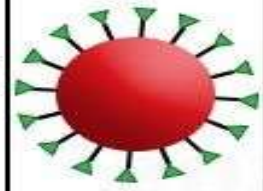
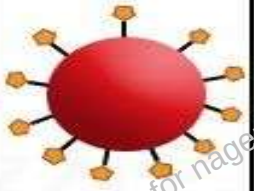
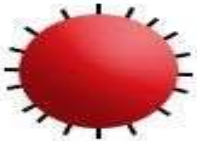
(b) Man does not develop, immunity to malaria during natural infection

(c) Vaccines can be developed only against bacteria

(d) Man is only an intermediate host and not the definitive host



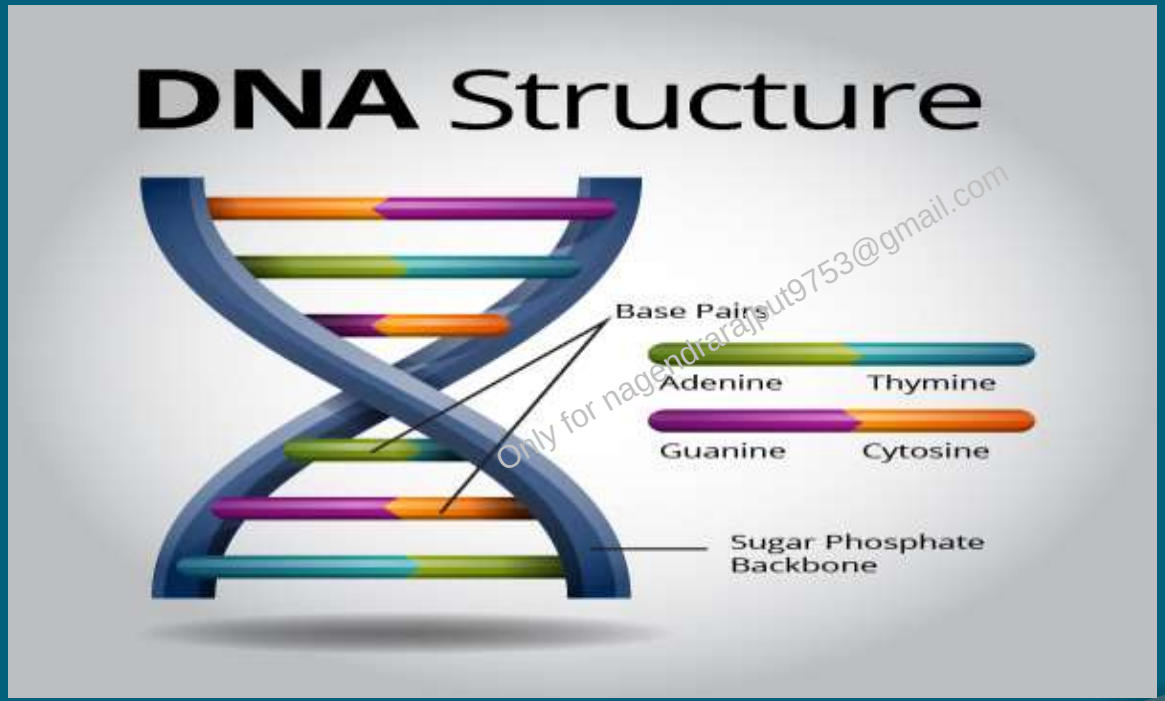
Blood groups

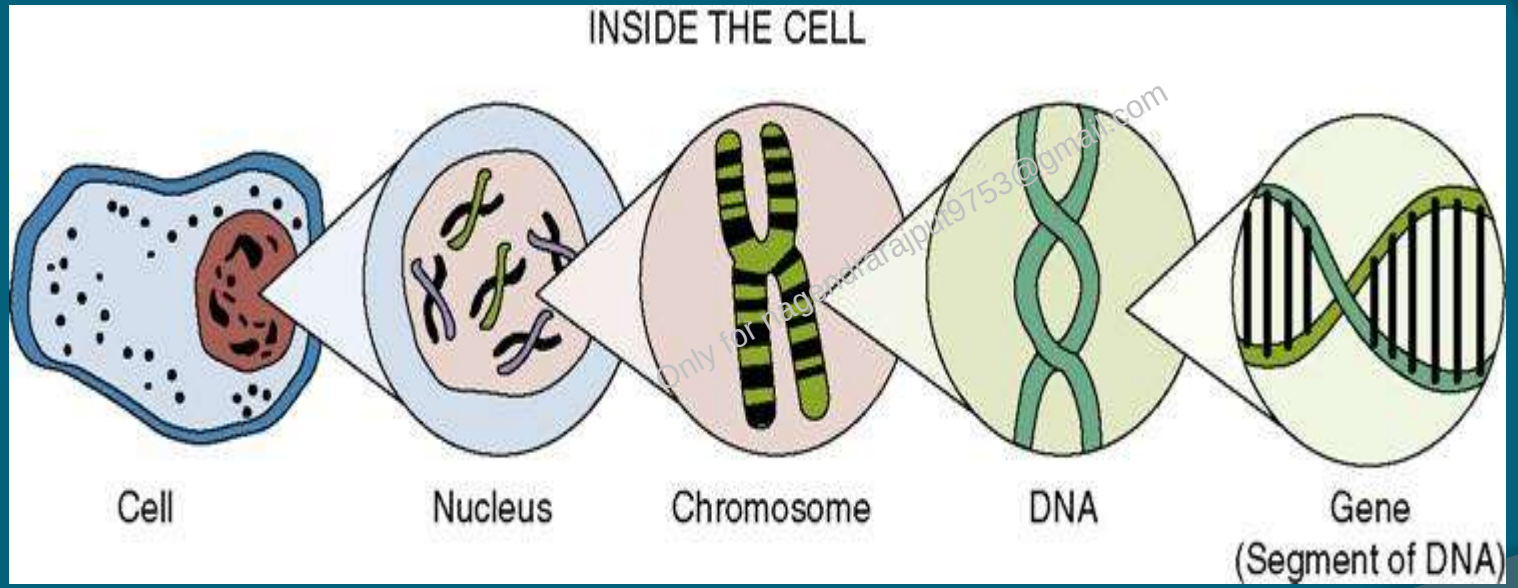
	Group A	Group B	Group AB	Group O
Red blood cell type				
Antibodies in Plasma	 Anti-B	 Anti-A	None	 Anti-B and Anti-A
Antigens in Red Blood Cell	A antigen	B antigen	 A and B antigens	None

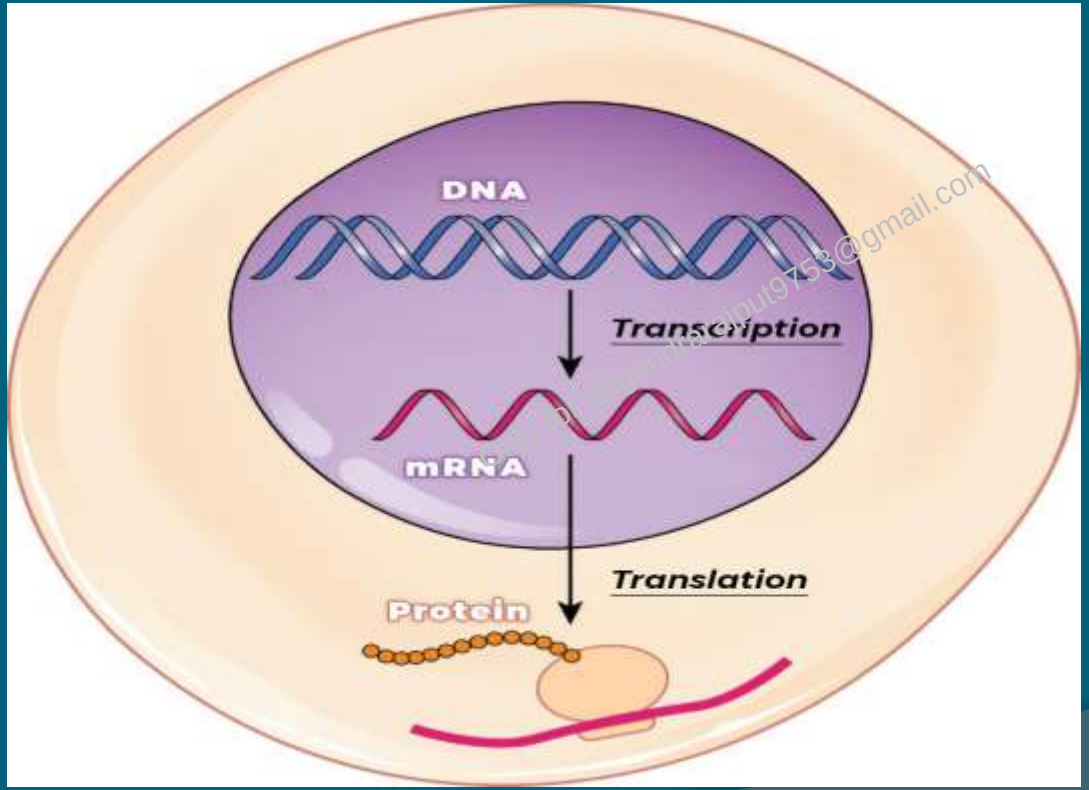
A man whose blood group is not known meets with a serious accident and needs blood transfusion immediately. Which one of the blood groups mentioned below and readily available in the hospital will be safe for transfusion?

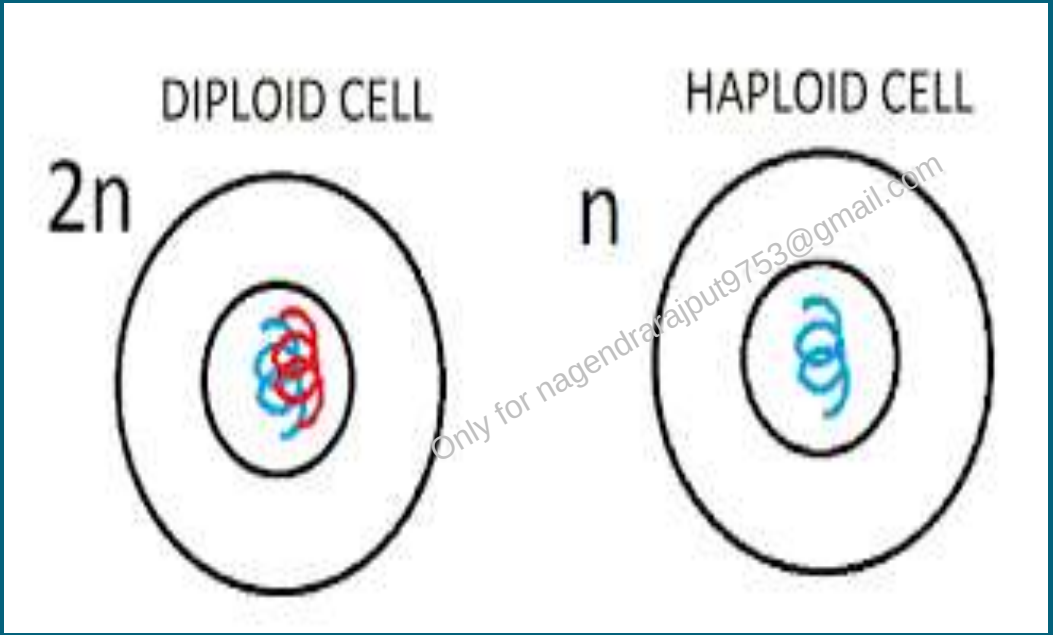
(a) O, Rh–
(b) O, Rh+
(c) AB, Rh–
(d) AB, Rh+

	DNA	RNA
Shape	Double helix (like a twisted ladder) 	Single stranded 
Nitrogen bases used	Adenine Guanine Cytosine *Thymine*	Adenine Guanine Cytosine *Uracil*
Type of sugar used	Deoxyribose	Ribose






DNA
Transcription
mRNA
Translation
Protein



Homologous Chromosomes