

# Biology for UPSC

{ Class- 1

### **Preliminary exam**

- General Studies Paper I - General Science

### **Mains exam**

- General studies Paper III- Biotechnology

# Syllabus

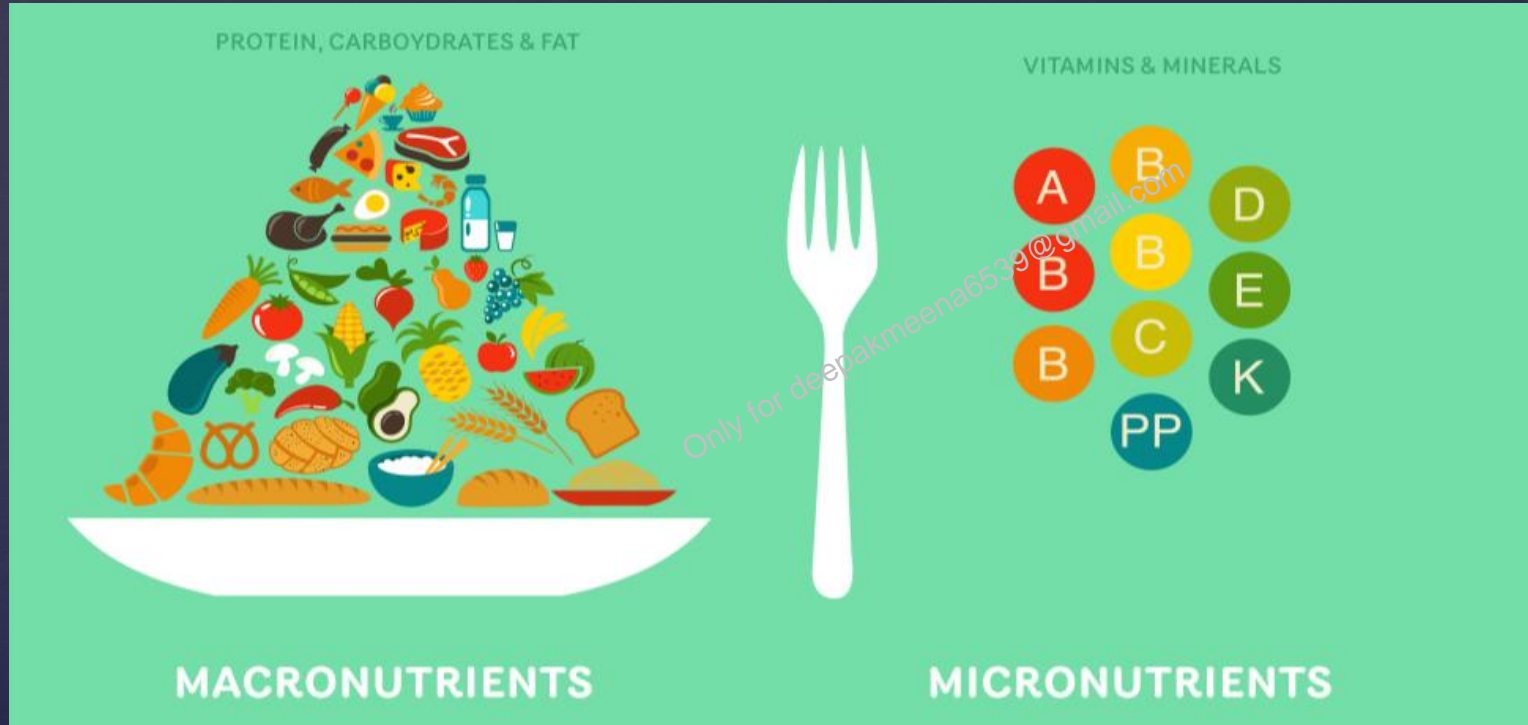
# Weightage in prelims

YEAR	NUMBER OF QUESTIONS
2024	1
2023	3
2022	5
2021	5
2020	4
2019	5
2018	2
2017	1

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# Food and Nutrition

# Types of Nutrients -





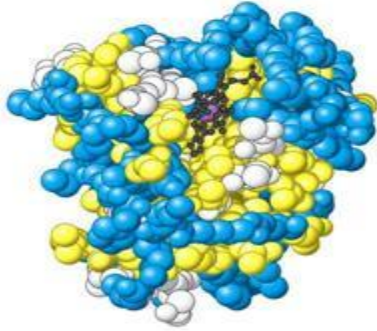
# CARBOHYDRATES



# PROTEINS



# Fibrous vs. Globular proteins



Globular: functional protein  
with active domain(s)

Fibrous: general structural  
role (e.g. collagen)







# FATS

# Different Types of Fat

## Unsaturated ("Good") Fats



Nuts, avocados and other vegetables

## Saturated Fats



### FOUND IN:

Animal products (dairy, meats) and oils (palm, coconut)

## Trans Fats



Processed snacks and baked goods



Hackensack  
Meridian Health

A company marketing food products advertises that its items do not contain trans-fats. What does this campaign signify to the customers?

1. The food products are not made out of hydrogenated oils.
2. The food products are not made out of animal fats/oils.
3. The oils used are not likely to damage the cardiovascular health of the consumers.

Which of the statements given above is/are correct?

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

# Vitamins



**Water  
Soluble**

**B Vitamins  
&  
Vitamin C**

**Fat  
Soluble**

**Vitamin A  
Vitamin D  
Vitamin E  
Vitamin K**

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- ℔ B1- THIAMINE
- ℔ B2- RIBOFLAVIN
- ℔ B3- NIACIN
- ℔ B5-PANTOTHENIC ACID
- ℔ B6-PYRIDOXINE
- ℔ B7- BIOTIN
- ℔ B9- FOLIC ACID
- ℔ B12- CYANOCOBALAMINE
- ℔ C- ASCORBIC ACID

# Water soluble vitamins

- & A- RETINOL
- & D- CALCIPHEROL
- & E- TOCOPHEROL
- & K- PHYLLOQUINONE

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# Fat soluble vitamins



Which one of the following statements is NOT correct ?

- a) Milk contains none of the B-vitamins.
- b) Vitamin-A retinol deficiency leads to dry and scaly skin.
- c) One of the symptoms of scurvy is pain in the joints.
- d) Vitamin B, thiamine deficiency can lead to heart failure.





# MINERALS

- { Macrominerals
  - & CALCIUM
  - & SODIUM
  - & CHLORINE
  - & POTASSIUM
  - & PHOSPHOROUS
  - & MAGNESIUM
  - & SULFUR

- { Microminerals
  - & IRON
  - & FLOURINE
  - & COPPER
  - & IODINE
  - & ZINC

# Minerals