

Department of Chemistry
Dumkal College
Basantapur, Dumkal
Murshidabad

STUDY MATERIALS

chem@YNSir

VITAMINS -MDC-SEM 1 & 3

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1. Vitamin A

Chemical Name: Retinol

Functions:

- Good vision (especially night vision)
- Healthy skin
- Immune system support

Sources:

Carrots, spinach, milk, liver, egg yolk

Deficiency Disease:

- Night blindness
 - Xerophthalmia (dry eyes)
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2. Vitamin K

Chemical Name:

- Phylloquinone (K₁)
- Menaquinone (K₂)

Functions:

- Blood clotting
- Bone health

Sources:

Green leafy vegetables, broccoli, cabbage

Deficiency Disease:

- Excessive bleeding

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- **Delayed blood clotting**
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3. Vitamin E

Chemical Name: Tocopherol

Functions:

- **Antioxidant**
- **Protects cells**
- **Healthy skin**

Sources:

Nuts, seeds, vegetable oils, spinach

Deficiency Disease:

- **Weak muscles**
 - **Nerve problems**
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4. Vitamin C

Chemical Name: Ascorbic acid

Functions:

- **Immunity**
- **Wound healing**
- **Collagen formation**
- **Helps absorb iron**

Sources:

Citrus fruits (orange, lemon), amla, guava, tomatoes

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Deficiency Disease:

- Scurvy (bleeding gums, weakness)

5. Vitamin D

Chemical Names:

- Cholecalciferol (D₃)
- Ergocalciferol (D₂)

Functions:

- Strong bones and teeth
- Helps absorb calcium

Sources:

Sunlight, fish, egg yolk, fortified milk

Deficiency Disease:

- Rickets in children
- Osteomalacia in adults

6. Vitamin B-Complex (Short Notes)

Vitamin	Chemical Name	Function	Sources	Deficiency
B ₁	Thiamine	Energy metabolism	Whole grains, pulses	Beri-beri
B ₂	Riboflavin	Cell growth	Milk, eggs	Cracks at mouth corners

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Vitamin	Chemical Name	Function	Sources	Deficiency
B₃	Niacin	Healthy skin, digestion	Meat, peanuts	Pellagra
B₅	Pantothenic acid	Hormone & energy production	Eggs, fish	Fatigue
B₆	Pyridoxine	Brain function	Fish, bananas	Anaemia
B₇	Biotin	Healthy hair, skin	Nuts, eggs	Hair loss
B₉	Folic acid	DNA formation	Green leafy veg	Anaemia
B₁₂	Cobalamin	Nerve function	Meat, dairy	Pernicious anaemia