

## Vitamins

- 1) A patient has had a series of blood clots, and has been placed on warfarin to reduce such incidents. Warfarin exerts its effect by blocking which of the following?
- (A) Platelet biogenesis  A
  - (B) Phospholipid synthesis  B
  - (C) Clotting factor synthesis  C
  - (D) Vitamin E activity  D
  - (E) Formation of  $\gamma$ -carboxyglutamate  E
- 2) Considering the patient in the previous question, which food should be avoided in large quantities while the patient is on warfarin?
- (A) Trout  A
  - (B) Milk products  B
  - (C) Green leafy vegetables  C
  - (D) Orange-yellow vegetables  D
  - (E) Steak  E
- 3) Which vitamin is a major lipid-soluble antioxidant in cell membranes?
- (A) Vitamin A  A
  - (B) Vitamin D  B
  - (C) Vitamin E  C
  - (D) Vitamin K  D
- 4) Which vitamin is required for synthesis of the blood clotting proteins?
- (A) Vitamin A  A
  - (B) Vitamin D  B
  - (C) Vitamin E  C
  - (D) Vitamin K  D
- 5) Weakness in muscles and increase in the fragility of red blood cells is caused due to the \_\_\_\_\_.
- (A) Deficiency of vitamin E  A
  - (B) Deficiency of vitamin D  B
  - (C) Deficiency of vitamin C  C
  - (D) Deficiency of vitamin A  D
- 6) Deficiency of which of the following Vitamins causes slow blood coagulation?
- (A) Vitamin B  A
  - (B) Vitamin K  B
  - (C) Vitamin C  C
  - (D) Vitamin D  D
- 7) Which of the given options is the main source of Vitamin E?
- (A) Palm oil  A
  - (B) Mustard oil  B
  - (C) Wheat germ oil  C
  - (D) Coconut oil  D
- 8) Vitamin K:
- (A) plays an essential role in preventing thrombosis.  A
  - (B) increases the coagulation time in newborn infants with hemorrhagic disease.  B
  - (C) is present in high concentration in cow or breast milk.  C
  - (D) is synthesized by intestinal bacteria.  D
  - (E) is a water-soluble vitamin.  E
- 9) Which one of these vitamins is involved in controlling cell differentiation and proliferation?
- (A) Vitamin A  A
  - (B) Vitamin B12  B
  - (C) Vitamin B6  C
  - (D) Vitamin E  D
  - (E) Vitamin K  E

10)The time of day, season, where you live, your skin color, and how often you use sunscreen can all affect the amount of which vitamin your skin is able to make?

- (A) Vitamin A  A
- (B) Vitamin C  B
- (C) Vitamin D  C
- (D) Vitamin B12  D
- (E) None of the above  E

11)Which of the following is mismatched?

- (A) Vitamin A- Xerophthalmia  A
- (B) Vitamin D- Rickets  B
- (C) Vitamin K- Beriberi  C
- (D) Vitamin C-Scurvy  D

12)Continuous bleeding from an injured part of body is due to deficiency of

- (A) Vitamin A  A
- (B) Vitamin B  B
- (C) Vitamin K  C
- (D) Vitamin E  D

13)Which one of the following is correctly matched?

- (A) Vitamin E - Tocopherol  A
- (B) Vitamin D - Riboflavin  B
- (C) Vitamin B - Calciferol  C
- (D) Vitamin A - Thiamine  D

14)The Haemorrhagic disease of new born is caused to the deficiency of

- (A) Vitamin K  A
- (B) Vitamin B12  B
- (C) Vitamin A  C
- (D) Vitamin B6  D

15)Which one of the following statements concerning vitamin D is correct?

- (A) Chronic renal failure requires the oral administration of 1,25-dihydroxycholecalciferol.  A
- (B) It is required in the diet of individuals exposed to sunlight.  B
- (C) 25-Hydroxycholecalciferol is the active form of the vitamin.  C
- (D) Vitamin D opposes the effect of parathyroid hormone.  D
- (E) A deficiency in vitamin D results in an increased secretion of calcitonin.  E

16)Calcium deficiency in the body occurs in the absence of

- (A) Vitamin C  A
- (B) Vitamin D  B
- (C) Vitamin A  C
- (D) Vitamin E  D

17)Which of the following will increase in vitamin D deficiency?

- (A) The plasma concentration of prothrombin  A
- (B) The plasma concentration of preprothrombin  B
- (C) The plasma activity of alkaline phosphatase  C
- (D) The plasma activity of acid phosphatase  D

18)What is the common name of "Cholecalciferol"?

- (A) Vitamin C  A
- (B) Vitamin B  B
- (C) Vitamin D  C
- (D) Vitamin A  D

19)Which one of the given options is the best source of Vitamin D?

- (A) Sunlight  A
- (B) Orange  B
- (C) Walnut  C
- (D) Apple  D

20) A deficiency of vitamin (X) causes weak bones . (X) is essential for the absorption of mineral (Y) . (X) is found in food (Z) . Identify X,Y and Z .

- (A) X: vitamin D , Y: calcium , Z: Fatty fish and seafood  A
- (B) X: vitamin C , Y: iron , Z: citrus fruits  B
- (C) X: vitamin B , Y: calcium , Z: green leafy vegetables  C
- (D) X: vitamin A , Y: phosphorous , Z: poultry products  D

21) Which is the leading cause of blindness in children worldwide?

- (A) Glaucoma  A
- (B) River blindness  B
- (C) Vitamin A deficiency  C
- (D) Accidental eye injuries  D
- (E) Cataracts  E

22) Which of the following is not a function of vitamin A

- (A) Detection of light in the eye  A
- (B) Synthesis of the blood clotting proteins  B
- (C) Activation of vitamin D receptors  C
- (D) Activation of thyroid hormone receptors  D
- (E) Regulation of gene expression and cell differentiation  E

23) Which vitamin is required for vision in dim light?

- (A) Vitamin A  A
- (B) Vitamin D  B
- (C) Vitamin E  C
- (D) Vitamin K  D

24) Which of the following vitamin functions as both, hormone and visual pigment?

- (A) Thiamine  A
- (B) Retinal  B
- (C) Riboflavin  C
- (D) Folic acid  D

25) Which of the given is a good source of Vitamin A?

- (A) Spinach  A
- (B) Cabbage  B
- (C) Cauliflower  C
- (D) Carrot  D

26) Retinol:

- (A) can be enzymically formed from retinoic acid.  A
- (B) in its ester form is transported from the intestine to the liver in chylomicrons.  B
- (C) is the light-absorbing portion of rhodopsin.  C
- (D) is phosphorylated and dephosphorylated during the visual cycle.  D
- (E) mediates most of the actions of the retinoids.  E

27) Which of the following is the most essential nutrient for a woman during her initial stages of pregnancy to prevent birth defects?

- (A) Thiamin  A
- (B) Folic acid  B
- (C) Vitamin C  C
- (D) Vitamin E  D

28) A 9-month-old child of strict vegan parents is brought to the pediatrician due to perceived muscle weakness. Due to their strict dietary beliefs, the child has not been given vitamin supplements. An image of the anterior of the knee reveals cupped and widened metaphyses. As the child is very fair skinned, the parents always cover up the child when they go outside such that minimal skin is exposed to the sun. In order to correct these problems the physician prescribes treatment with which of the following?

- (A) Vitamin D  A
- (B) Vitamin K  B
- (C) Folic acid  C
- (D) Vitamin B12  D
- (E) Vitamin E  E

29) Which one of the following statements concerning vitamin B12 is correct?  
(A) The cofactor form is vitamin B12 itself.  
(B) It is involved in the transfer of amino groups.  
(C) It requires a specific glycoprotein for its absorption.  
(D) It is present in plant products.  
(E) Its deficiency is most often caused by a lack of the vitamin in the diet.

- A
- B
- C
- D
- E

30) A woman, who eats a standard meat-containing diet, has had one child born with a neural tube defect, and is considering becoming pregnant again. Blood work showed normal levels of B12 and total folic acid (specific type of folic acid not specified). One possible explanation for the woman's difficulties in her first pregnancy is a thermolabile variant of which of the following enzymes?

(A) N5, N10-methylenetetrahydrofolate reductase  
(B) Serine hydroxymethyl transferase  
(C) Ornithine transcarbamoylase  
(D) Phenylalanine hydroxylase  
(E) Tyrosine aminotransferase

- A
- B
- C
- D
- E

31) Concerning the woman in the previous question, alteration of her diet in which of following ways would be beneficial for her future pregnancies

(A) B12 supplementation  
(B) Folate supplementation  
(C) Iron supplementation  
(D) A meat-free diet  
(E) Homocysteine supplementation

- A
- B
- C
- D
- E

32) Which of the following vitamins is also known as cobalamin?

(A) Vitamin B11  
(B) Vitamin B2  
(C) Vitamin B6  
(D) Vitamin B12

- A
- B
- C
- D

33) Which of the following is a function of vitamin B12?

(A) Synthesis of TMP (thymidine monophosphate)  
(B) Decarboxylation of amino acids to form amine neurotransmitters  
(C) Synthesis of methionine from homocysteine  
(D) Carboxylation of pyruvate to oxaloacetate  
(E) Synthesis of methylene tetrahydrofolate

- A
- B
- C
- D
- E

34) Vitamin B12 contain :

(A) Zn  
(B) Ca  
(C) Fe  
(D) Co

- A
- B
- C
- D

35) Stomach problems like chronic gastritis and stomach cancer can lead to vitamin B12 deficiency.

(A) True  
(B) False

- A
- B

36) Pernicious anemia is anemia due to B12 deficiency that occurs due to

(A) Folic acid deficiency  
(B) Lack of vitamin B12 in the diet  
(C) Lack of intrinsic factor  
(D) Iron deficiency

- A
- B
- C
- D