

Enrollment No. _____



**NAVVRACHANA
UNIVERSITY**

A UGC Recognized University

School: School of Science
Program/s: MSc.-I.S
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December - 2022

Course Code: LS247 **Course Name:** Toxicology and Pharmacology I

Date: 12/12/2022

Time: 11.30 to 1.30 pm

Total Marks: 40

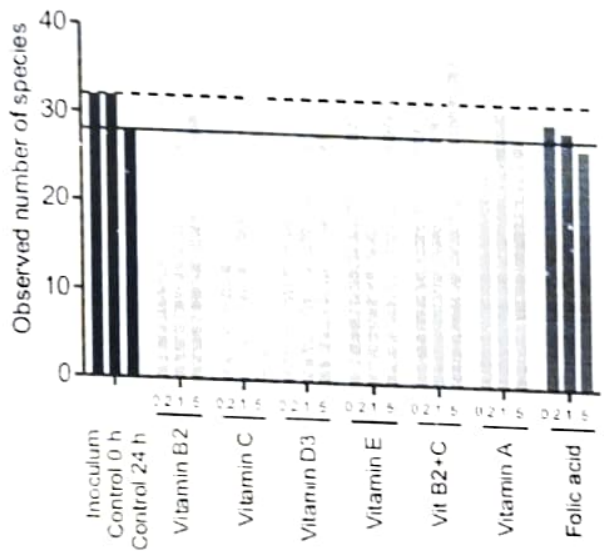
Total Pages: 04

Instructions:

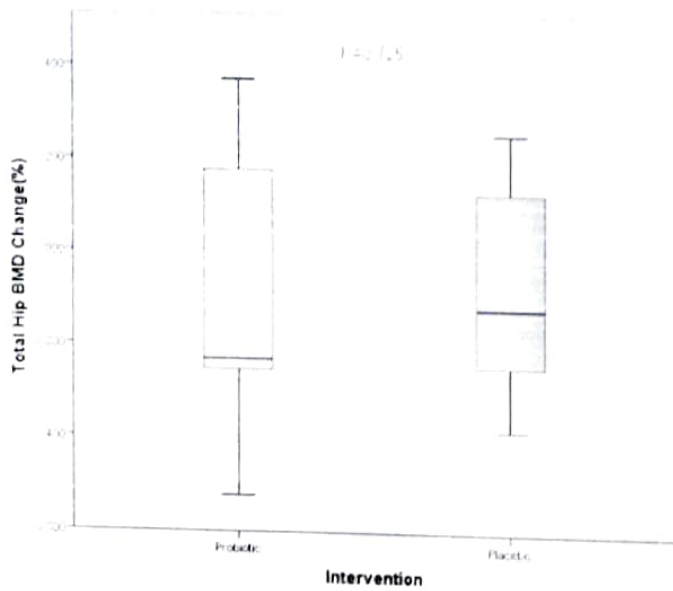
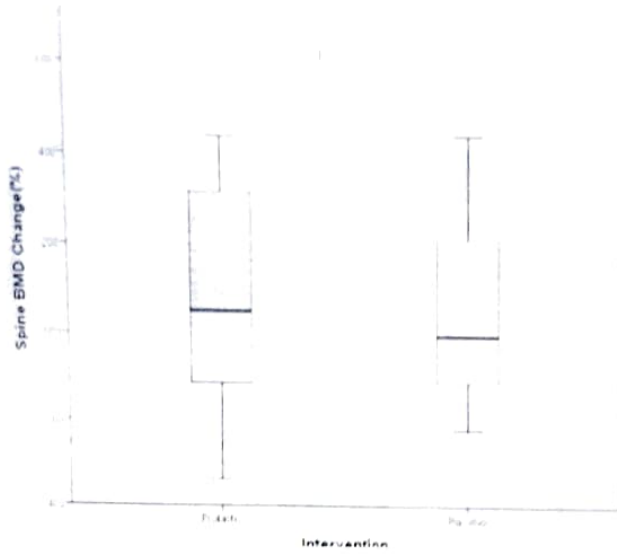
- Write each answer on a new page.
- Draw the diagram wherever necessary
- Stick to the Word Limit given in the Questions.

Q. No.	Details	Marks	CO	BTL
Q.1	<p>Do as Directed</p> <p>1. _____ is a Fat soluble Vitamin found in Cabbage, cauliflower, spinach and other green leafy vegetables. It has an important component in the blood. Which vitamin is being referred in the above statement? a. Vitamin E b. Vitamin B c. Vitamin K d. Vitamin C</p> <p>2. Which of the following vitamin deficiency causes Beriberi? a. Vitamin B1 b. Vitamin B2 c. Vitamin B6 d. Vitamin B12</p> <p>3. Which of the following vitamins serves as a hormone precursor? a. Vitamin A b. Vitamin C c. Vitamin D d. Vitamin K</p> <p>4. Which of the following is a component of the coenzyme A? a. Retinol b. Pyridoxine c. Retinoic acid d. Pantothenic acid</p> <p>5. Which of the following is not a function of Vitamin A a. Detection of light in the eye b. Synthesis of the blood clotting proteins c. Activation of vitamin D receptors d. Activation of thyroid hormone receptors e. Regulation of gene expression and cell differentiation</p> <p>6. Mark the INCORRECT statement about Ascorbic acid. a) It is a strong reducing agent b) It can have synthesized in the body c) Involves in hydroxylation of prolyl- and lysyl- residues of collagen d) Shows antioxidant activity</p>	1x6=6	CO1, CO 2, CO 3, CO 4	BTL1, BTL 2, BTL 3, BTL 4

<p>Q.2 Answer the following-Any Five (20-30 words only per answer)</p> <ol style="list-style-type: none"> 1. What is a Ketogenic diet? What is its importance in regards to PCOS? 2. Which is the form of Vitamin K that is remaining active in the body and why? 3. A person is experiencing a retarded growth and black-bad skin. According to the symptom which vitamin deficiency can lead to this condition and 4. What happens when glucose level increases in the body above normal values? State the consequences at cell and tissue level. 5. Discuss in brief the aetiology of Diabetes Type II 6. Discuss in brief the formation of plaques and tangles in case of Alzheimer's disease. 	<p>2x5=10</p>	<p>CO1, CO 2, CO 3, CO 4</p>	<p>BTL1, BTL 2, BTL 3, BTL 4</p>
---	---------------	--	--

<p>Q.3 Answer the following (max 300-350 words per answer)</p> <p>1. Non-metric multidimensional scaling (nMDS) analysis of microbiome profiles generated via fermentation supernatant samples.</p>  <p>Observed number of species</p> <p>Inoculum Control 0 h Control 24 h Vitamin B2 Vitamin C Vitamin D3 Vitamin E Vit B2+C Vitamin A Folic acid</p> <p>0.2 1.5 0.2 1.5 0.2 1.5 0.2 1.5 0.2 1.5 0.2 1.5</p> <p>Considering this graph, explain what will be the microbiome profiles under different vitamin treatments? Explain what will happen if the amount is given in mixtures?</p>	<p>3x4=12</p>	<p>CO1, CO 2, CO 3, CO 4</p>	<p>BTL1, BTL 2, BTL 3, BTL 4</p>
--	---------------	--	--

2. A 60 aged women has a beginning of development of Osteoporosis. Her hip and spine was monitored and following changes (Below Diagram) were observed under different doses of Probiotics.



Using this diagram, design an experiment to understand:

- i. What is the effect of Probiotics on the hip and spine of the women
- ii. What is the importance of placebo in this case? And how will you monitor placebo in the experiment.
- iii. How will this experiment will help to infer the effect probiotics on BMD.

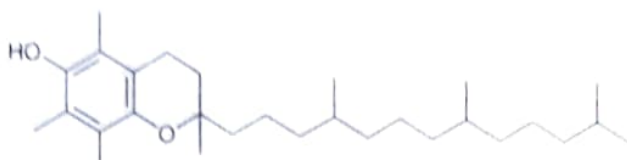
3. Give a detailed account of the underlined causes, symptoms, treatment associated with PCOS and PCOD.

4. Compare normal and obese in reference to the Leptin regulation.

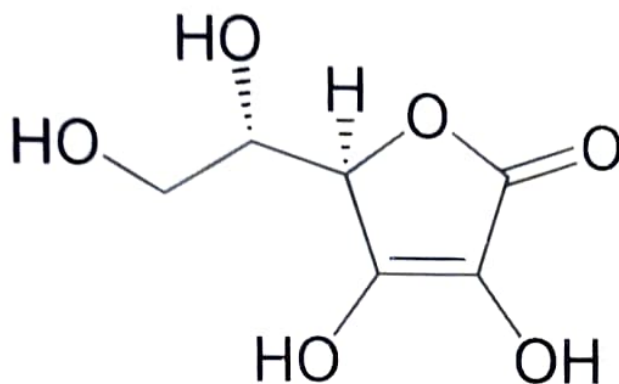
Q.4 Answer the following (max 500 words per answer).

6x2=12	CO1,	BTL1,
	CO 2,	BTL 2,
	CO 3,	BTL 3,
	CO 4	BTL 4

1. Elucidate the synthesis, importance, levels and Disease conditions of the below molecule in the body:

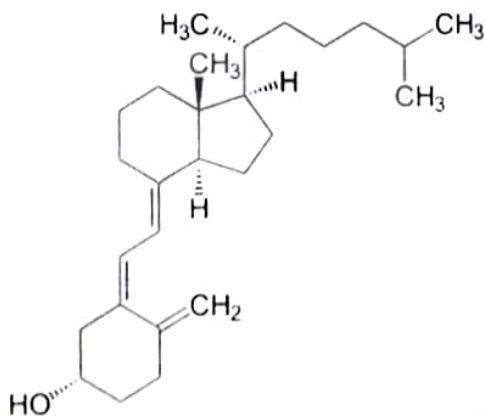


2. Explain the role of the following molecule in the body? What happens if the levels go up? Is it a natural source? Or synthesis in our body? Do talk about its synthesis and importance in maintenance of cell redox potential.



OR

2. The following molecule is synthesized in our body due to the external abiotic factor. The precursor molecule of this compound is found less in green vegetables but more in mushrooms, and other sources. Identify the molecule and write its activation in the human body. What happens if we are having deficiency of it? Does it have same levels in male and females? How does its metabolism occur in various cells?



*****All the Very Best*****