STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086 (For candidates admitted from the academic year 2019-20 & thereafter)

SUBJECT CODE: 19CH/ME/FC45

B.Sc. DEGREE EXAMINATION, APRIL 2022 BRANCH IV - CHEMISTRY FOURTH SEMESTER

COURSE MAJOR ELECTIVE PAPER FOOD CHEMISTRY

TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A										
		R ALL THE QUESTIONS.		(30x1=30)						
I	Ch	oose the correct answer.								
	1.	1. Which one of the following has the highest glycemic index?								
		-	c) Corn oil	d) Mango						
	2.	Dietary fiber is an indigestible		, 0						
		regulatory agent.		1 2						
		a) Fat b) Protein	c) Carbohydrate	d) Amino acid						
	3.	The formula for calculating BMI	•	,						
		a) $\frac{Weight}{height}$ b) $\frac{Weight in Kg}{(height in m)^2}$		d) $\frac{Weight\ in\ Kg}{(height\ in\ cm)^2}$						
	4. An agency of India engaged in periodic diet and nutrition survey is -									
		a) Indian Council of Medical Research								
b) World Health Organisation										
		d) National Nutrition Monitorin	g Bureau							
	5.	The full form of AGMARK is								
		a) Agricultural Marketing								
		c) Agro-marketing	d) None of the abov	re						
	6.	Amla is good source of								
		a) Vitamin C b) Vitamin A c) Vitamin D d) Vitamin K								
	7 is not the function of anti-oxidant.									
		a) Color preservation	vation b) preventing protein degradation ncidity d) preserving flavor							
	8.		is necessary in diet							
		a) Iodine b) phosphorus	c) vitamin C	d) Magnesium						
	9.	Honey is a								
		a) Protein b) carbohydrate								
	10.	. To determine the amount of free water available for microbes to use in a food system, a								
		food scientist would measure the	of th	at food.						
		a) Water activity b) pe	ercent water	c) pH d) Brix						
	11.	When fruits and vegetables are b		oration occurs. This is called						
		a) Caramelization	b) sulfating							
		c) dehydration	d) enzymatic brown	o						
	12.	This involves cooking in minimum	•	-						
		a) Simmering	b) Poaching	c) Stewing d) Boiling						

II Fill in the blanks:

13. Expansion of ISI is
14. Enzyme present in saliva is
15. The energy released in the body from food is measured as
16. Cyanocobalamin is(Vitamin)
17. One gram of fat gives kcal of energy.
18. Expansion of BIS is
19. An example of carotenoid containing vegetable is
20. Indian Institute of Crop Processing Technology, Thanjavur is one of the referral food
laboratories associated with

/2/

III Match the following

21.	Essential amino acid	a.	Calcium
22.	Milk protein	b.	Aspartame
23.	Artificial Sweetener	c.	Lysine
24.	Food Preservative	d.	casein
25.	Spinach (Palak)	e.	Sodium benzoate

IV State whether true or false:

- 26. The protein present in wheat is casein
- 27. Minerals constitute about 25% of the total body weight.
- 28. Proteins are best energy source for the body.
- 29. High levels of salt in pickles aids as an anti-microbial agent
- 30. Bile juice acts as an emulsifier in digestion of fats

Section - B

Answer any five questions.

 $(5 \times 6 = 30)$

- 31. Discuss the various functions of lipids.
- 32. Discuss the hot water extraction and mechanical expeller extraction of vegetable oil.
- 33. Explain the following with respect to flavour and colour production by carbohydrates -a. caramelization b. Enzymatic browning (3+3)
- 34. a. Give an account on pectin. (3)
 - b. What is a balanced diet for an average adult? (3)
- 35. A cup of mushroom fried rice has 8 grams protein, 50 grams carbohydrate and 14 grams fat. Calculate the energy provided by the rice. What percentage of the energy in the fried rice comes from each of the energy yielding nutrient?
- 36. Discuss the salient features of FPO.
- 37. a) Differentiate between natural and artificial flavours. (3)
 - b) Explain the various components of total energy requirement. (3)

Section – C

Answer any two questions.

 $(2 \times 20 = 40)$

38. a) Describe the salient features of FSSAI.

(10)

b) Define the following terms in accordance with FSSAI.

(2+2)

i) misbranded food

- ii) unsafe food
- c) What are the diseases associated with protein malnutrition? Prepare a high protein and low carbohydrate diet plan with total energy value of 2300 kCal for a 45-year-old person. (6)
- 39. a) Give a detailed account of different types of water in food.

(9) (7)

b) The following is the label from the packet of vinaigrette salad dressing

VINAIGRETTE SALAD DRESSING INGREDIENTS WATER, SOYA OIL, VINEGAR, MUSTARD, SUGAR, PARSLEY, CORIANDER, WHITE WINE, SALT, GARLIC, BASIL, OREGANO, GREEN PEPPERS, MODIFIED STARCH, TARTARIC ACID, COLOURS (CARAMEL AND COPPER CHLOROPHYLL), LEMON JUICE, STABILISER (XANTHAN GUM), ANTIOXIDANT (BHA), FLAVOURINGS STORAGE BEST BEFORE - 2 MONTHS AFTER PURCHASE. DO NOT FREEZE; KEEP REFRIGERATED AFTER OPENING.

- i) What is the ingredient present in largest amount?
- ii) What is the ingredient present in smallest amount?
- iii) How many ingredients are present in smaller quantities than salt? Write down three of them.
- iv) Are there any food additives in this food? Name two of them.
- v) How long after buying this food would it still be safe to eat?
- vi) Imagine you made a similar salad at home using only ingredient that you can buy easily. How long approximately would you expect it to stay fresh?
- vii) What is the function of xanthan gum in this food?
- c) Explain the properties of gels.

(4)

40. a) Discuss in detail food rancidity.

(8)

- b) Explain the role of water in correcting the consistency of thickened soup. (2)
- c) What is HACCP? Elaborate on the seven principles of HACCP and highlight its importance. (10)