

MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI

1	Name of Course	C. C. IN BODYBUILDING, DIETICIAN AND FITNESS TRAINER (W.E.F. 2016-17)																																							
2	Course Code	404102																																							
3	Max.No.of Students Per Batch	25 Students																																							
4	Duration	6 Months																																							
5	Type	Part Time																																							
6	No.Of Days / Week	6 Days																																							
7	No.Of Hours /Days	4 Hrs																																							
8	Space Required	Practical Lab	=	400	Sq feet																																				
		Class Room	=	200	Sq feet																																				
		TOTAL	=	600	Sq feet																																				
9	Minimum Entry Qualification	S.S.C. Pass																																							
10	Objective Of Course	To create a skillful 1.Gym trainer 2. Bodybuilding trainer 3. Fitness trainer 4. Personal trainer 5. Dietitian & Nutritionist 6. Gym owner																																							
11	Employment Opportunity	Can be worked Fitness Trainer																																							
12	Teacher's Qualification	1. MBBS, BDS, BAMS, BHMS, BNYS 2. Degree and Diploma in Dietetics & Nutrition 3. B.P.Ed with 2 yrs of gym experience																																							
13	Training System	Training System Per Week																																							
		Theory	Practical	Total																																					
		06 hrs	18 hrs	24 hrs																																					
14	Exam. System	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sr. No.</th> <th style="text-align: center;">Paper Code</th> <th style="text-align: center;">Name of Subject</th> <th style="text-align: center;">TH/PR</th> <th style="text-align: center;">Hours</th> <th style="text-align: center;">Max. Marks</th> <th style="text-align: center;">Min. Marks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">40410211</td> <td>Basic Anatomy, Physiology, Biochemistry And Pathology</td> <td style="text-align: center;">TH-I</td> <td style="text-align: center;">3 hrs.</td> <td style="text-align: center;">100</td> <td style="text-align: center;">35</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">40410212</td> <td>Fitness, Nutrition And Dietetics</td> <td style="text-align: center;">TH-II</td> <td style="text-align: center;">3 hrs.</td> <td style="text-align: center;">100</td> <td style="text-align: center;">35</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">40410221</td> <td>Exercise And Fitness</td> <td style="text-align: center;">PR-I</td> <td style="text-align: center;">3 hrs.</td> <td style="text-align: center;">200</td> <td style="text-align: center;">100</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">TOTAL</td> <td></td> <td></td> <td style="text-align: center;">400</td> <td style="text-align: center;">170</td> </tr> </tbody> </table>					Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	40410211	Basic Anatomy, Physiology, Biochemistry And Pathology	TH-I	3 hrs.	100	35	2	40410212	Fitness, Nutrition And Dietetics	TH-II	3 hrs.	100	35	3	40410221	Exercise And Fitness	PR-I	3 hrs.	200	100			TOTAL			400	170
Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks																																			
1	40410211	Basic Anatomy, Physiology, Biochemistry And Pathology	TH-I	3 hrs.	100	35																																			
2	40410212	Fitness, Nutrition And Dietetics	TH-II	3 hrs.	100	35																																			
3	40410221	Exercise And Fitness	PR-I	3 hrs.	200	100																																			
		TOTAL			400	170																																			

THEORY - I - BASIC ANATOMY & PHYSIOLOGY, BIOCHEMISTRY AND PATHOLOGY

- CIRCULATORY SYSTEM
- RESPIRATORY SYSTEM
- DIGESTIVE SYSTEM
- NERVOUS SYSTEM
- EXCRETORY SYSTEM
- REPRODUCTIVE SYSTEM
- ENDOCRINAL SYSTEM
- MUSCULO-SKELETAL SYSTEM
- LYMPHATIC SYSTEM
- SPECIAL SENSES SYSTEM
- COMMON PATHOLOGIES ASSOCIATED WITH ABOVE SYSTEMS
- BASIC BIOCHEMISTRY
- Carbohydrate, Protein and fats metabolism, Vitamins, Minerals, etc

THEORY - II - FITNESS, NUTRITION & DIETETICS

A) FITNESS

Fitness & Exercise

- Fitness its need, importance and scope
- Principles of General & specific warm up
- Conditioning exercises for fitness

Training & Training Methods

- Training principles for fitness
- Training methods & cycles

Test, Measurement & Evaluation

- Physical Fitness test
- Body Measurements
- Norms & criteria for Fitness evaluation

B) NUTRITION

INTRODUCTION :-

- 1) to understand the role of food in health.
- 2) to know nutritional composition of food.
- 3) to understand functions of nutrients.
- 4) to know recommended dietary allowance for various age groups

DETAILS :-

- 1) introductions to nutrition:- introduction, food groups, food guide, diet pyramid, balanced diet, food exchange list, r.d.n., b.m.r., malnutrition, under nutrition, over nutrition, optimum nutrition, cooking methods
- 2) carbohydrates:- chemical composition classification, digestion & absorption into the proteins, functions, symptoms, sources.
- 3) proteins:- chemical composition classification, digestion & absorption into the proteins, functions, symptoms, sources.
- 4) fats & oil - chemical composition classification, digestion & absorption into the proteins, functions, symptoms, sources.
- 5) mineral elements:- major minerals or macro minerals, minor, minerals, trace elements.
- 6) vitamins:- water soluble vitamins are a, d, e, & k & fat soluble vitamins are b group vitamins & vitamin c
- 7) acid base balance:-
- 8) water:- functions, sources, deficiency.
- 9) fiber:- functions, deficiency, sources.
- 10) energy metabolism:- role of hormones in metabolism, requirements at the body, factors, influencing basal metabolic rate, caloric value of food, determining your own energy needs, translating rda into daily food intake s.d.a, b.v.
- 11) food faddism & faculty food habits
- 12) safety of foods

C) DIETETICS

INTRODUCTION :-

- 1) to develop ability to select foods which are nutritionally adequate for various groups of selected physiological conditions.
- 2) to develop ability to plan nutritionally adequate meals for different age groups & selected physiological conditions.
- 3) to create awareness about normal and modified food.
- 4) to modify their food habits according to their demands of physical condition.

DETAILS :-

1) PRINCIPLES OF DIET PLAN:-

2) NUTRITION DURING THE LIFE SPAN.

- 1) diets during normal life cycle.
- 2) nutritional requirements of different age groups.
- 3) nutrition for aging & the aged

3) NUTRITION FOR SPORTS & FITNESS:-

- 1) fitness & its measurements.
- 2) objectives of nutritional management.
- 3) methods of measuring energy expenditure.
- 4) sources of energy in the body.
- 5) factors affecting fuel utilization.
- 6) nutritional requirement of athletes.
- 7) nutritional allowance
- 8) broad guidelines for sport persons.
- 9) pre- competition & post- competition meal.

4) MODIFICATION OF NORMAL DIETS: TYPES OF DIETS: –

- 1) normal diet- liquid, full liquid, soft diet

5) DIETS DURING ENERGY IMBALANCE- HIGH & LOW CALORIE DIETS:-

- 1) energy balance
- 2) definitions types & causes of obesity
- 3) measurement of obesity
- 4) fad diets
- 5) maintenance diet
- 6) diet for an underweight person

PRACTICAL - I EXERCISE AND FITNESS

Unit	Concept
Unit - I	Warm up & cool down <ul style="list-style-type: none"> • Warm up • Cool down • Cardio • Stretches for cool down
Unit - II	Exercises <ul style="list-style-type: none"> • Exercises & basic competencies • Free hand exercises <ul style="list-style-type: none"> - General exercises - Specific exercises - Conditioning exercises • Free weight (resistance)& machine exercises
Unit III	Techniques of exercises <ul style="list-style-type: none"> • Repetitions, Sets, Sessions & recovery • Prime Movers • Agonist & Antagonist muscles
Unit IV	Training Methods <ul style="list-style-type: none"> • Circuit training • Weight training • Slow/fast continues, varied pace training
Unit V	Fitness Testing & Evaluation <ul style="list-style-type: none"> • Body measurements • Body weight, height & BMI

	Identification and working of various gym apparatus
	Gym visit Vocational guidance on opening and operating of a gym Guidance on employment opportunities in gym and fitness sector

LIST OF EQUIPMENTS, TEACHING AIDS AND OTHER RESOURCES

Sr. No.	Items	Required Quantity
1	Skip rope	1 No.
2	Medicine ball	1 No.
3	Exercise mats	3 Nos
4	Pull up bar	1 No.
5	Stop watch	1 No.
6	Measuring tapes	1 No.
7	Water cans	1 No.
8	Dumbbells 2.5 kg 5 kg 7.5 kg 10 kg 12.5 kg 15 kg 17.5 kg 20 kg	1 pair of each
9	Wt. Bars 4 ft Straight bar EZ curl bar Chest press bar	1 No. 1 No. 1 No.
10	Wt. Plates 2.5 kg 5 kg 7.5 kg 10 kg 12.5 kg 15 kg 17.5 kg 20 kg	1 pair of each
11	Treadmill	1 No.
12	Cycles	1 No.
13	Chest press	1 No.
14	Lat pulley	1 No.
15	Leg curl and extension	1 No.
16	Tricep pulley	1 No.
17	Peck deck	1 No.
18	Mirrors	As required

REFERENCE BOOKS

ANATOMY, PHYSIOLOGY, BIOCHEMISTRY AND PATHOLOGY-

1. Anatomy & Physiology - By Ross And Wilson
2. Physiology - By Sembulingam
3. Essentials Of Biochemistry - By Satyanarayan
4. Essentials Of Pathology - By Harsh Mohan

NUTRITION AND DIETETICS

1. Food & Nutrition – Vol 1& 2. – Dr. M.S Swaminathan
2. Nutrition & Dietetics – Shubangi Joshi.
3. Annashatra - Sumati Kukade.
4. Potion Aani Ahar Shatra - Triveni Pharkade.
5. Essential Of Nutrition & Diet - Williams.
6. Textbook For Nutrition & Dietitics - Subhangi Joshi

FITNESS AND BODYBUILDING

1. Burn Fats, Feed Muscles - By Tom Venuto
2. Beyond Brawn - By Stuart Mcrobert
3. Encyclopedia Of Body Building - By Arnold Schwarzenegger
