

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Learner Registration Number

Pearson BTEC
Level 3 Nationals
Extended Diploma

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Monday 14 January 2019

Morning (Time: 3 hours)

Paper Reference **31824H**

Sport and Exercise Science

Unit 13: Nutrition for Sport and Exercise Performance

Part S

You must have:

Calculator

Nutritional principles information booklet

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Complete **all** activities.
- Answer the activities in the spaces provided
– *there may be more space than you need.*
- This booklet contains material for the completion of the set task under supervised conditions.
- This booklet is specific to each series and this material must only be issued to learners who have been entered to undertake the task in the relevant series.
- This booklet must be kept securely until the start of the 3 hour supervised assessment session.

Information

- The total mark for this paper is 50.
- An information booklet is supplied on nutrition values.
- The marks for **each** activity are shown in brackets
– *use this as a guide as to how much time to spend on each activity.*

Advice

- Read each activity carefully before you start to answer it.
- Try to answer every activity.
- Check your answers if you have time at the end.

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Instructions to Teachers/Tutors

The set task should be completed during the three-hour session as timetabled by Pearson.

The set task must be carried out under supervised conditions.

Learners must complete this set task in the task and answer booklet.

Teachers/tutors should note that they are responsible for maintaining security and for reporting issues to Pearson. In particular:

- only permitted materials for the set task can be brought into the supervised environment
- during any permitted break and at the end of the session, materials must be kept securely and no items removed from the supervised environment.

Maintaining security

- During supervised assessment sessions, the assessment areas must only be accessible to the individual learner and to named members of staff.
- Learners can only access their work under supervision.
- Any work learners produce under supervision must be kept securely.
- Learners are not permitted to have access to the internet or other resources during the supervised assessment period.

After the session, the teacher/tutor will confirm that all learner work was completed independently as part of the authentication sheet submitted to Pearson.

This paper must be read in conjunction with the unit information in the specification and the BTEC Nationals Instructions for Conducting External Assessments (ICEA) document.

See the Pearson website for details.

Outcomes for submission

Each learner must submit the following:

- A completed task and answer booklet.

Learners must complete a declaration that the work they submit is their own.

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Guidance for Learners

Read the set task information carefully.

In this booklet you will be asked to carry out specific activities using the information given.

The supervised assessment task must be taken in a single session of three hours. You may be provided with a supervised break during the assessment in addition to the specified hours.

You must plan your time and work independently throughout the three-hour supervised assessment period.

You will complete the activities within the set task under supervision and your work will be kept securely during any breaks taken.

You must work independently and must not share your work with other learners.

Your teacher/tutor may clarify the wording that appears in this task but cannot provide any guidance on completion of the task.

Outcomes for submission

You must submit the following:

- A completed task and answer booklet.

You must complete a declaration that the work you submit is your own.



Set task information

You should read the case study carefully looking at the client's personal information and their current typical nutritional programme and you should also consider how these relate to each other.

You need to spend at least **30 minutes** on this before you start the activities in the Set Task Brief.

The nutritional principals information booklet gives extra information on nutritional values that will help you with Activities 1 and 2. You should study this carefully.

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Client information

Matt takes part in long distance cycling.

The current typical nutritional programme shown represents what Matt usually eats and drinks during the week.

Personal details

Age	38 years old
Gender	Male
Height	1 m 88 cm
Weight	64 kg
BIA result	8%
Activity levels	Moderately active

Performance details

Sports event
Matt is taking part in a coast to coast cycle event that covers 230 km over three days.
Phase of training
Matt is in the 'after event' phase after day one of the coast to coast cycle race.



Current typical nutrition programme								
Day	Breakfast 7 am	Lunch 1.30 pm	Dinner 6.30 pm	Fluids throughout the day	Snacks throughout the day	Calories	Macronutrients	Activity levels and timings
Monday	Banana, apple and carrot smoothie	Salmon salad with lettuce, avocado, tomatoes, cucumber	3 egg omelette Half a red pepper Half an onion Large serving of cheddar cheese	1 glass of apple juice 1 litre of water 2 cans of cola 3 coffees with full fat milk	2 rice cakes 1 full fat yogurt	1540 kcal	Carbohydrates 150 g Fat 60 g Protein 100 g	5 pm 20 km bike ride
Tuesday	No breakfast	Prawn, broccoli, avocado and beetroot salad	Vegetable curry Rice Naan bread	1 glass of orange juice 1.5 litres of water 1 can of cola 3 coffees with full fat milk	Small bowl of nuts 2 crackers with cheese	1420 kcal	Carbohydrates 140 g Fat 60 g Protein 80 g	
Wednesday	2 slices of brown bread toasted Butter	Lentil and carrot soup Brown bread roll	Seafood paella – monkfish, rice, chopped tomatoes, mussels, peas, broad beans	1 litre of water 2 cans of cola 3 coffees with full fat milk	1 full fat yogurt	1620 kcal	Carbohydrates 180 g Fat 60 g Protein 90 g	5 pm 30 km bike ride



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Current typical nutrition programme

Day	Breakfast 7 am	Lunch 1.30 pm	Dinner 6.30 pm	Fluids throughout the day	Snacks throughout the day	Calories	Macronutrients	Activity levels and timings
Thursday	Banana, apple and carrot smoothie	Tofu and vegetable soup Brown bread roll	Fish stew with tomatoes and onion	1 glass of apple juice 1 litre of water 2 cans of cola 3 coffees with full fat milk	Small bowl of nuts	1490 kcal	Carbohydrates 160 g Fat 50 g Protein 100 g	5 pm 10 km bike ride
Friday	No breakfast	Chilli stuffed peppers with aubergine, kidney beans, 1 egg and feta cheese	Vegetable curry Rice	1 glass of orange juice 1.5 litres of water 1 can of cola 4 coffees with full fat milk	1 full fat yogurt	1040 kcal	Carbohydrates 120 g Fat 40 g Protein 50 g	
Saturday	1 white bagel Smoked salmon Cream cheese	Baked beans 2 slices of brown bread toasted	Cheese pizza Garlic bread	1 glass of apple juice 1 litre of water 2 cans of cola 2 coffees with full fat milk	Small bowl of nuts	2010 kcal	Carbohydrates 220 g Fat 90 g Protein 80 g	3 pm 40 km bike ride
Sunday	3 scrambled eggs 1 slice of brown bread toasted	Tomato soup Pitta bread	Roast dinner – vegetarian fillet, roast potatoes, Yorkshire pudding, peas, carrots and gravy	1 glass of apple juice 2 litres of water 2 cans of cola 3 coffees with full fat milk		2030 kcal	Carbohydrates 260 g Fat 70 g Protein 90 g	



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Set task

You must read the information carefully.

Complete all your work in the task and answer booklet in the space provided.

Activity 1

Interpret Matt's current nutritional programme in relation to nutritional intake for health and wellbeing.

Use the nutritional principles information sheet to support your answer.

(Total for Activity 1 = 20 marks)

Activity 2

Modify the nutritional programme, based on nutritional strategies, in relation to Matt's sports event.

Use the nutritional principles information sheet to support your answer.

(Total for Activity 2 = 20 marks)

Activity 3

Recommend nutritional guidance for Matt based on his phase of training.

(Total for Activity 3 = 10 marks)

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Task and answer booklet

Please do not write answers outside the spaces provided.

You must complete ALL activities in this task and answer booklet.

- 1** Interpret Matt’s current nutritional programme in relation to nutritional intake for health and wellbeing.

Use the nutritional principles information sheet to support your answer.

Your answer will focus on the following points:

- (a) food intake
- (b) fluid intake
- (c) factors affecting digestion and absorption of nutrients and fluids.

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(Total for Activity 1 = 20 marks)



2 Modify the nutritional programme, based on nutritional strategies, in relation to Matt's sports event.

Use the nutritional principles information sheet to support your answer.

Your answer will focus on the following points:

- (a) modifications that are relevant to the sporting event
- (b) justifying the modifications
- (c) the impact of factors affecting digestion and absorption of nutrients and fluids.

(20)

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(Total for Activity 2 = 20 marks)



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(Total for Activity 3 = 10 marks)

TOTAL FOR TASK = 50 MARKS



Pearson BTEC Level 3 Nationals Extended Diploma

Monday 14 January 2019

Paper Reference **31824H**

Sport and Exercise Science

**Unit 13: Nutrition for Sport and Exercise Performance
Nutritional Principles Information Booklet**

Insert

Instructions

- You will need the information in this booklet to answer Activities 1 and 2.
- Read the information carefully.
- You must **not** write your answers in this booklet.
- Only your answers given in the question paper will be marked.

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Nutritional principles information sheet

Nutritional programme

The table places some of the foods from the nutritional programme into specific food groups.

Food	Food group
Aubergine	Fruit and vegetables – a type of vegetable
Bagel	Grains – a type of bread
Beetroot	Fruits and vegetables – a type of vegetable
Broad beans	Protein – a type of vegetable protein
Chilli stuffed peppers	Fruit and vegetables – vegetables with hot spices
Cracker	Grains – a dry, thin baked food made out of flour and water
Cream cheese	Dairy – a type of high fat cheese
Feta cheese	Dairy – a type of cheese
Fish stew	Protein – made from fish
Kidney beans	Protein – a type of vegetable protein
Lentil	Protein – a type of vegetable protein
Monkfish	Protein – fish
Mussels	Protein – shellfish
Naan	Grains – bread
Omelette	Dairy – fried beaten eggs
Paella	Grains – made from rice Protein – fish Vegetables
Pitta bread	Grains – a type of bread
Rice cake	Grains – made out of puffed rice
Smoked salmon	Protein – fish that has been smoked
Smoothie	Fruits and vegetables – fruits blended to make a drink
Tofu	Protein – a type of vegetable protein
Vegetable curry	Fruits and vegetables – vegetables in a spicy sauce
Vegetarian fillet	Protein – a vegetable plant-based protein
Yogurt	Dairy – made from milk
Yorkshire pudding	Dairy – made from eggs, flour and milk

Energy content of macronutrients

1 g of protein provides 4 kcal

1 g of carbohydrate provides 4 kcal

1 g of fat provides 9 kcal

Harris Benedict equation to calculate basal metabolic rate (BMR)

Males = $66.5 + (13.75 \times \text{weight in kg}) + (5.003 \times \text{height in cm}) - (6.755 \times \text{age in years})$

Females = $655.1 + (9.563 \times \text{weight in kg}) + (1.85 \times \text{height in cm}) - (4.676 \times \text{age in years})$

Activity levels

Sedentary: BMR x 1.2

Lightly active: BMR x 1.375

Moderately active: BMR x 1.55

Very active: BMR x 1.725

Extra active: BMR x 1.9

Body mass index equation

Body mass index (BMI) = $\frac{\text{Weight in kg}}{\text{Height in m} \times \text{Height in m}}$



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