

TERM 2
FORM FOUR
HOME SCIENCE (441/1)
Paper 1 (Theory)
TIME: 2 ½ hours
MARKING SCHEME

SECTION A

1. Functions of lipids in the body.
 - Storage of energy
 - Carry fat soluble vitamins
 - Provide energy
 - Increase satiety as they take longer to digest
 - Fat deposited under the skin insulates the body against heat loss
 - Fats around delicate organs protects them against injury
 - Provide essential fatty acids needed for proper brain functioning
 - Important in production of steroid hormones(1 mark for each, 1 x 2 = 2marks)
2. Vitamins with the given scientific names.

Tocopherols	Vitamin E
Cholecalciferol	Vitamin D
Thiamine	Vitamin B1
Phylloquinone	Vitamin K

(½ mark for each, ½ x 4 = 2marks)
3. Reasons why a classroom should be well lit.
 - To prevent eye strain when reading
 - To reduce incidences of accidents due to tripping over items
 - To discourage pests like rats or cockroaches
 - To reduce fatigue that is caused by shadows falling on the work
 - To give a warm cheerful environment for the learners(1 mark each, 1 x 2 = 2marks)
4. Reasons why charcoal should be well lit before starting cooking.
 - To avoid smoke that could be irritating to the eyes and throat
 - To avoid production of soot that could lead to blackening of cooking utensils
 - To ensure the food cooks fast/save time when cooking(1 mark each, 1 x 3 = 3marks)

5. Soft furnishings used in the bedroom.

- Curtains
- Bedside mats/rugs
- Carpets
- Cushions
- Pillows
- Bedcovers/duvet covers
- Duvets
- Bedsheets
- Mattress covers
- Lampshades
- Pelmets/valances

($\frac{1}{2}$ mark each, $\frac{1}{2} \times 4 = 2$ marks)

6. Function of each of the mentioned machine parts.

Feed dog	Facilitates movement of fabric during sewing
Tension disc	Regulates the tightness or looseness of the upper thread
Take up lever	Controls the movement of thread from the spool pin to the needle
Stop motion screw	immobilizes the movement of the needle for bobbin winding

($\frac{1}{2}$ mark each, $\frac{1}{2} \times 4 = 2$ marks)

7. Qualities of a good dish cloth.

- Strong to withstand frequent washing
- Absorbent to dry dishes
- Lint free to avoid leaving pieces of fibre on the dishes
- Colour fast so that it does not leave colour on dishes
- Can withstand high temperatures so that it can be boiled to sterilize

(1 mark each, $1 \times 2 = 2$ marks)

8. Items that can be starched in the home.

- Tablecloths
- Table napkins
- Bed sheets
- Belts
- Curtains
- Pillowcases
- Garment lining

($\frac{1}{2}$ mark each, $\frac{1}{2} \times 4 = 2$ marks)

9. Advantages of tacking before stitching.

- Give guidance for permanent stitching
- Hold two or more pieces of fabric together to avoid shifting when making permanent stitches
- Allow for fitting and adjusting a garment before permanent stitches are made
- (1 mark each, $1 \times 2 = 2$ marks)

10. Areas where diagonal tacking/basting can be done during stitching.

- Pockets
- Collars
- Cuffs
- Pleats
- Waistbands
- Hems

($\frac{1}{2}$ mark each, $\frac{1}{2} \times 4 = 2$ marks)

11. Completion of classification of fibres.

Fibre	Class
Linen	Plant ($\frac{1}{2}$ mark)
Acetate rayon	Regenerated ($\frac{1}{2}$ mark)
Wool	Animal ($\frac{1}{2}$ mark)
Elastofibre	Synthetic ($\frac{1}{2}$ mark)

12. Ways of preventing falls in the home.

- Keeping rooms tidy
- Disposing peelings correctly
- Keeping floors dry/wiping spills immediately they occur
- Ensuring the house is well lit
- Proper maintenance of floors to avoid potholes
- Ensuring floor coverings are in good repair

(1 mark each, $1 \times 3 = 3$ marks)

13. Uses of tomatoes in cooking.

- Enhance flavour in food
- Garnishing
- Thickening sauces
- Enhance colour of cooked food
- Marinating/ softening meat
- Part of a raw salad
- Improve the nutritive value of the food

($\frac{1}{2}$ mark for each, $\frac{1}{2} \times 4 = 2$ marks)

14. Advantages of shopping in a big supermarket/hypermarket.

- Saves time as all items may be found under one roof
- There is a wide variety to choose from
- There are chances of getting cheap items that are on offer
- One can easily ask for assistance from the attendants
- One can select and choose the particular item to carry home
- Prices of items are well indicated so one can confirm the amount to pay at the end

(1 mark each, $1 \times 3 = 3$ marks)

15. Reasons why iron should be increased in a pregnant woman's diet.

- To replace blood that will be lost during childbirth
- To boost blood levels needed in the formation of foetus blood
- To ensure that the foetus gets enough iron to store for use in the first six months of life

- To prevent anaemia in both mother and baby
- To ensure adequate supply of oxygen to the foetus
(1 mark for each, $1 \times 2 = 2$ marks)

16. Limitations of burning as a method of disposing refuse.

- Smoke emitted during burning causes air pollution
- Not all refuse can be burned
- If refuse is not well sorted, some may explode such as spray cans
- Building incinerators is expensive
- Some items when burned produce a bad smell/fumes that can choke or cause chest problems
(1 mark for each, $1 \times 2 = 2$ marks)

17. Advantages of cash buying.

- One may get discount when paying cash
- There is less danger of overspending
- It helps one to avoid impulse buying
- Helps one keep to a budget
(1 mark for each, $1 \times 2 = 2$ marks)

18. Causes of thread breaking when using a sewing machine.

- Weak thread
- Thread wound below the spool pin
- Tight tension
- Machine wrongly threaded
- Needle incorrectly inserted
- Needle has a defective/rough eye
- Machine not oiled
($\frac{1}{2}$ mark for each, $\frac{1}{2} \times 2 = 1$ mark)

19. Mention four reasons for blanching vegetables.

- Reduce bulk for storage
- Stops action of enzymes
- Kills some microorganisms
- Helps retain nutrients
- Maintains colour of the vegetables
($\frac{1}{2}$ mark for each, $\frac{1}{2} \times 4 = 2$ marks)

SECTION B

20.

a) Procedure for laundering a sheer silk blouse.

- Collect all equipment and materials needed ($\frac{1}{2}$)
- Wash by kneading and squeezing($\frac{1}{2}$) in warm($\frac{1}{2}$) water containing a mild($\frac{1}{2}$) detergent($\frac{1}{2}$)
- Rinse($\frac{1}{2}$) thoroughly in warm($\frac{1}{2}$) water to remove all detergent
- Give a final cold($\frac{1}{2}$) rinse containing methylated spirit($\frac{1}{2}$)

- Roll($\frac{1}{2}$) in a clean($\frac{1}{2}$) dry towel($\frac{1}{2}$) to remove water
- Iron($\frac{1}{2}$) on the wrong side($\frac{1}{2}$) using a moderately hot($\frac{1}{2}$) iron
- Air($\frac{1}{2}$) to remove all moisture
- Fold/hang($\frac{1}{2}$) in a clean dry drawer/wardrobe($\frac{1}{2}$)
- Clear the working area($\frac{1}{2}$)

($\frac{1}{2}$ x 18 correct steps = 9marks)

b) Procedure for cleaning a polished dining table.

- Collect all equipment and materials needed($\frac{1}{2}$)
- Protect the working surface($\frac{1}{2}$)
- Wipe the table with a dry cloth to remove dust($\frac{1}{2}$)
- Clean by wiping($\frac{1}{2}$) with a cloth wrung from warm($\frac{1}{2}$) soapy($\frac{1}{2}$) water
- Rinse by wiping with a cloth wrung from clean($\frac{1}{2}$) water
- Wipe the legs and underside with a clean damp cloth($\frac{1}{2}$)
- Leave the table to dry for a while($\frac{1}{2}$)
- Apply polish sparingly($\frac{1}{2}$) using circular motion
- Leave the polish to dry($\frac{1}{2}$) and penetrate into the wood
- Buff($\frac{1}{2}$) the table with a clean, soft cloth to remove excess polish and give a sheen
- Clear the working surface($\frac{1}{2}$)

($\frac{1}{2}$ x 12 correct steps = 6marks)

c) Procedure for cleaning tarnished silver spoons.

- Place the spoons in a kitchen($\frac{1}{2}$) bowl
 - Cover with white vinegar($\frac{1}{2}$) and add baking soda($\frac{1}{2}$)
 - Leave the spoons for about 1 hour($\frac{1}{2}$)
 - Rinse($\frac{1}{2}$) in clean($\frac{1}{2}$) hot water
 - Dry($\frac{1}{2}$) thoroughly with a soft($\frac{1}{2}$) clean dish cloth($\frac{1}{2}$)
 - Wrap each spoon with kitchen tissue ($\frac{1}{2}$)
 - Store in a clean($\frac{1}{2}$) dry($\frac{1}{2}$) drawer
 - Clear the sink($\frac{1}{2}$)
- ($\frac{1}{2}$ x 10 correct steps = 5marks)

SECTION C

21.

- a) Reasons for including fruits and vegetables in a meal
- They contain roughage which is important in preventing constipation
 - Fruits are a rich source of nutrients such as vitamin A and C and also contain minerals such as potassium and iron.
 - They are colourful and add interest in the meal
 - They can be used to vary texture in a meal
 - Most fruits are sweet and add to flavour in a meal
 - They are generally low in calories thus one can eat a lot without fear of too many calories
 - They take long to digest thus keep one full for longer
- (1 mark each, 1 x 5 = 5marks)
- b) Factors to consider when buying a clothes drying rack.
- It should be smooth to avoid snagging threads on clothes
 - It should be made of a material that does not rust to avoid staining clothes
 - It should be made of strong material so that it can support the weight of wet clothes
 - The material should be water resistant so that it is not destroyed or weakened by constant exposure to wetness.
 - It should be stable on the ground to avoid toppling and making clothes dirty
 - It should be easily foldable for easy storage
 - It should be of a good size when opened out to accommodate a sizeable amount of clothes
 - It should not be too high or too low to avoid strain when placing clothes and also to avoid dirt from getting on to the clothes
- (1 mark each, 1 x 5 = 5marks)
- c) Factors to consider when buying cabbages.
- Hygiene. Buy from a clean place/seller to ensure the cabbages are not contaminated.
 - Freshness. Buy freshly picked cabbages and have firm leaves
 - Insect infestation. The cabbage should be free from insect or holes
 - Colour. The cabbages should be green in colour not white or yellow
 - Full/firm. The cabbages should be well formed and firm on pressing not hollow as this indicates that they are not yet mature
 - Clean. The cabbages should not be having surface dirt such as soil or mud to avoid contamination
- (1 mark each, 1 x 4 = 4marks)
- d) Problems a student may face when buying body lotion.
- Too many brands. It takes a lot of time trying to choose from a wide variety of brands. Also one may end up choosing a brand that is of low quality and not get value for money
 - Limited resources. Students generally do not have much money and this may compromise the quality of lotion they can buy

- Lack of information. There may be little information available on the performance of different lotions leaving the student confused on the brand to buy
- Confusion and misinformation from advertisements. Some of the advertisements on lotions give exaggerated information on performance of lotions and this may lead a student to choose a brand that is more advertised but is of lower quality
- Low information on composition of lotions. A student may lack crucial or sufficient information from manufacturers on the composition of different lotions leaving her/him at the risk of buying a lotion with harmful chemicals
(1 mark for statement, 1 mark for explanation, 2 x 3 = 6marks)

22.

a) Principles of food preservation.

- Application of heat. The food is heated to a high temperature in order to kill micro-organisms such as bacteria, fungus and natural enzymes that would otherwise cause food spoilage.
- Removal of water/dehydration. Water in the food is removed or reduced to inhibit or inactivate enzymes and micro-organisms. This is done through drying of the food.
- Exclusion of oxygen. Air is removed during bottling and canning to deprive micro-organisms of oxygen which most need to continue surviving.
- Reduction of temperature. Low temperatures slow or retard the growth of micro-organisms thus deterring further damage on food
- Use of additives. Addition of sugar, salt, vinegar or chemicals in the food stops or slows down the growth and multiplication of micro-organisms.

(1 mark for statement, 1 mark for explanation, 2 x 3 = 6marks)

b) Rules to observe when removing stains from garments.

- Remove stains while still fresh as they get fixed with time and more difficult to remove.
- Identify the type of stain and use the correct stain remover.
- Identify the type of fabric so as to use an agent that will not destroy the fabric.
- If the stain is unknown start with the mildest agent and move on to stronger ones.
- Once the stain is removed rinse the area thoroughly to remove traces of reagent that could weaken the fabric.
- Work from outside to the centre to avoid spreading the stain.
(1 mark each, 1 x 5 = 5marks)

c) Causes of malnutrition in pregnancy.

- Ignorance. Mothers may not know the importance of proper nutrition in pregnancy and thus may not be keen on a healthy diet.
- Illness and infections. Physical and mental illness may affect a mother's ability to eat and digest food. Illnesses may lead to loss of appetite and poor eating.

- Poverty. Mothers who come from low socio-economic groups may lack money to buy healthy foods.
 - Morning sickness. Severe vomiting during the first trimester in pregnancy may deprive a mother of nutrients due to their loss through vomiting.
 - Dental problems. A mother with teeth problems in pregnancy may find it difficult or unpleasant to chew food and this may make her avoid eating due to dental discomfort.
 - Taboos and cultural beliefs. Some cultures have taboos on what a mother should eat in pregnancy. Some of the prohibited foods are those that are rich in nutrients and a mother may avoid them if in keeping with culture.
 - Worm infestation. Mothers who have pica may eat things like soil that could expose them to worms which then lead to deficiencies in nutrients.
- (1 mark each, 1 x 5 = 5marks)

d) Reasons why it is not advisable to buy a cooker on hire purchase.

- The final cost paid increases from the original as one has to pay the interest charged.
 - By the time one enjoys the full ownership, the cooker may be old and worn.
 - If one is unable to pay the instalments, the cooker may be taken away and the money already paid lost.
 - One does not get to negotiate for a discount like when buying cash.
 - One cannot fully enjoy the use of the cooker until it is paid in full.
- (1 mark each, 1 x 4 = 4marks)

23.

a) Qualities of a well-made patch on a bedsheet.

- It should lie flat
 - It should be firmly stitched
 - It should be inconspicuous
 - The patch should match the weight of the bed sheet
 - The patch should match in grain with the bedsheet
 - The patch should be of similar age to the bed sheet
 - The patch should be of similar fibre content as the bed sheet
 - The edges of the cut edges should be well tucked in.
 - The patch should be applied on the wrong side of the bed sheet.
- (1 mark each, 1 x 4 = 4marks)

b) Factors to consider when choosing a seam in garment construction.

- Type of fabric. Heavy fabrics require seams that are non-bulky while light fabrics can take all type of seams.
- Type of garment. Some garments such as overalls require stronger seams than those garments used for light duties.
- Style of the garment. The seam should emphasize the style feature of the garment for example a garment with a princess line may require a seam that is conspicuous.
- Effect desired. If one wants to have a decorative effect on the garment then a conspicuous seam is desirable to lay emphasis on the right side.

- Position of the seam. Some seams are more easily worked on straight areas than curved areas. Also some seam may be uncomfortable in certain areas for example a French seam may be uncomfortable around the armhole due to its fell.

(1 mark for statement, 1 mark for explanation, 2 x 4 = 8marks)

c) Benefits of breastfeeding to a nation.

- Breastfeeding protects babies against diseases which means the country has healthier citizens who become more productive as adults.
- Because breastfed babies get sick less, mothers are able to go to work with less interruptions thus help in contributing towards the country's income.
- Breastfed babies have greater outcomes and are less likely to die early in life thus reducing the child mortality rate in a country.
- Breastfeeding is safe for the environment as it is renewable, does not need packaging or transportation thus keep the environment healthy breastfeeding helps maintain healthy weight in children which reduces incidences of chronic illnesses associated with obesity later in life. This becomes a saving to the nation.
- Breastfeeding reduces incidences of critical illness in children thus ensuring that less money is spent on health care costs.

(1 mark each, 1 x 4 = 4marks)

d) Qualities of fabric for making a baby's clothes.

- It should be soft so as not to irritate baby's delicate skin.
- The fabric should not generate static electricity to avoid sticking to the skin which can cause irritation.
- It should be absorbent to take in sweat to avoid discomfort.
- The fabric should be easy to wash so that it can be kept clean easily.
- It should be colour fast so as not to run and lose its original look when washed.
- The fabric should be warm so as to keep the baby warm especially in the first few months of life.

(1 mark each, 1 x 4 = 4marks)