

## 4.13 HOME SCIENCE (441)

### 4.13.1 Home Science Paper 1 (441/1)

#### SECTION A (40 marks)

1. Definition of terms as used in meal planning

(a) Blanch - to dip in hot water. (1 mark)

(b) Essence - Is a flavouring made of extracts. (1 mark)

2. Reasons for basting foods while cooking:

To;

- moisten foods when cooking
- prevent the food from drying up
- improve or enhance appearance

Any 2 x 1 = 2 marks

3. Uses of carbohydrates in the body

- Provides energy and heat in the body
- Excess carbohydrates are converted into glycogen and stored in the body to be used up later.
- Helps in bowel movement and prevention of constipation.
- Assists the body in regulation of proteins and fat metabolism.

Any well written point 1 mark (2 x 1 = 2 marks)

4. Ways of conserving vitamin C in green leafy vegetables during preparation

- wash vegetables before cutting
- prepare just before serving
- keep covered after cutting to prevent oxidation
- do not soak vegetables in water
- wash using cold water

Any 2 x 1 = 2 marks

5. Disadvantages of réchauffe dishes

- can easily get contaminated and may cause food poisoning
- usually loses its original flavour therefore requiring strong flavouring which may have side effects
- Reheating may render some of the foods indigestible for example proteins toughens.
- Loss of colour of the food.
- Loss of nutrients especially the vitamins.

Any 2 x 1 = 2 marks

6. Waterborne diseases caused by poor sanitation

- typhoid
- cholera
- dysentery
- bilhazia
- amoebiasis
- hepatitis A

Any 2 x  $\frac{1}{2}$  mark = 1 mark

7. Ways of enhancing personal appearance

- proper care of the body by maintaining cleanliness
- wearing clean well maintained clothes
- keeping the hair neat
- correct use of cosmetics, jewellery and accessories

Any 2 x 1 = 2 marks

8. Ways of meeting the emotional needs of a patient recuperating at home

- Reassure the patient that all will be well
- Encourage activities to lessen boredom for example reading, watching TV, knitting etc
- Avoid discussing worrying issues either with the patient or in his/her presence
- Counselling the patient so that she/he can develop a positive attitude towards the illness.
- Appearing happy and enthusiastic when assisting the patient.
- Make the room appealing to cheer up the patient e.g. put flowers.

Any 2 x 1 = 2 marks

9. Distinguishing between a cesspool and a soak pit.

- A cesspool is a concrete tank built underground to cater for drainage of one or a few homes and emptied regularly while a soak pit is dug into the ground and then filled with layers of large and small stones and covered with soil. Waste water drains into the pit and soaks gradually into the surrounding soil.

Clear distinction 2 marks

10. Locally available materials that can be used to improvise cleaning abrasives.

- Charcoal
- Ash
- Sand
- Rough leaves
- Sisal
- Seeds

Any 4 x  $\frac{1}{2}$  = 2 marks

11. Advantages of regular cleaning of household items

- increases lifespan of items
- less energy is used when cleaning
- economical on cleaning materials
- improves appearance
- psychological satisfaction

Any 2 x 1 = 2 marks

12. Factors to consider when caring for a pit latrine.

- clean the floor according to the type
- sprinkle ashes in and around the hole
- cover the hole
- close the latrine door
- use disinfectants
- smoking

Any 2 x 1 = 2 marks

13. Difference between a need and a want

A need is what we require to live while a want includes everything else we might like to have but we do not necessarily require to survive.

Correct differentiation

1 mark

14. Advantages of having labels on consumer products.

To know:

- the content of the product
- how to use or take the product/instructions for use
- the brand name of the product
- the manufacturer
- the expiry date of the product
- the quantity packaged/size/weight

Any 2 x 1 = 2 marks

15. Examples of builders added to soaps and soapless detergents during manufacture

- sodium carbonate
- borax
- sodium sulphate
- sodium silicate

Any 2 x  $\frac{1}{2}$  = 1 mark

16. Main reason for repairing clothes before laundering is:
- to avoid further damage to the clothes
- 1 x 1 = 1 mark
17. Advantages of using soft water in laundry work
- less detergent is used
  - lathers easily with soap/saves time/saves energy
  - does not form scum
  - gentle on the hands
- Any 2 x 1 = 2 marks
18. Points to consider when selecting fabric for use by beginners in stitching:
- easy to press;
  - not slippery
  - non fraying
  - strong
  - cheap
  - readily available
  - lightweight fabric/not heavy
- Any 3 x 1 = 3 marks
19. Reasons for blending fibres. To
- improve quality of fibres
  - make fabrics affordable
  - provide variety
- Any 2 x 1 = 2 marks
20. Factors to consider when fixing a zip on a garment
- consider weight of the fabric
  - sew on after opening has been made and pressed
  - fix on double layer of fabric
  - align zip to the opening
- Any 2 x 1 = 2 marks
21. Ways of attaching a collar to the neckline
- using a crossway strip/binding
  - sandwiching the collar between the facing and the garment
  - self neatening
  - using a band
- 3 x 1 = 3 marks

**SECTION B (20 marks)**

22. (a) Laundering a woolen sweater

- Collect equipment and materials ( $\frac{1}{2}$ )
- Shake ( $\frac{1}{2}$ ) take measurements ( $\frac{1}{2}$ ) and record measurement ( $\frac{1}{2}$ ) draw the outline
- Wash in warm soapy ( $\frac{1}{2}$ ) water by kneading and squeezing ( $\frac{1}{2}$ ) and maintain under water ( $\frac{1}{2}$ ) throughout
- Rinse several times ( $\frac{1}{2}$ ) in warm water ( $\frac{1}{2}$ )
- Squeeze ( $\frac{1}{2}$ ) out water and roll on a clean towel ( $\frac{1}{2}$ )
- Lay on a flat ( $\frac{1}{2}$ ) surface under shade ( $\frac{1}{2}$ ) to dry
- Confirm the size and shape ( $\frac{1}{2}$ )

**Finishing**

- Press ( $\frac{1}{2}$ ) on the wrong side using a pressing cloth ( $\frac{1}{2}$ ) using a warm ( $\frac{1}{2}$ ) iron. Avoid pressing the ribbing ( $\frac{1}{2}$ )
- Air ( $\frac{1}{2}$ ) fold ( $\frac{1}{2}$ ) and store ( $\frac{1}{2}$ ) in a clean dry place ( $\frac{1}{2}$ )

$22 \times \frac{1}{2} = 11 \text{ marks}$

(b) Cleaning a stainless steel sink

- Collect equipment and materials ( $\frac{1}{2}$ )
- Remove food particles or solid waste from the sink before washing
- Clean in hot ( $\frac{1}{2}$ ) soapy ( $\frac{1}{2}$ ) water using soft ( $\frac{1}{2}$ ) cloth  
Rinse thoroughly with clean hot ( $\frac{1}{2}$ ) water
- Allow water to run down ( $\frac{1}{2}$ ) the pipe to settle in the U-bend
- Clean ( $\frac{1}{2}$ ) tap with a dry cloth
- Dry the sink with a dry clean kitchen cloth ( $\frac{1}{2}$ )
- Clear up ( $\frac{1}{2}$ )

$10 \times \frac{1}{2} = 5 \text{ marks}$

22. (c) Procedure for cleaning an enamel cup

- Collect cleaning equipment and materials ( $\frac{1}{2}$ )
- Clean in warm soapy ( $\frac{1}{2}$ ) water and fine scouring powder ( $\frac{1}{2}$ ) using a sponge / sisal / coconut fibre ( $\frac{1}{2}$ ).
- Rinse thoroughly ( $\frac{1}{2}$ ) in clean water ( $\frac{1}{2}$ )
- Dry completely ( $\frac{1}{2}$ ) on a rack / dish cloth
- Store appropriately ( $\frac{1}{2}$ )

$8 \times \frac{1}{2} = 4 \text{ marks}$

SECTION C (40 marks)

23. (a) Rules to observe when making batters
- Sieve the dry ingredients together in order to mix them well and incorporate air.
  - Add only half the amount of the liquid together with the egg in order to form a thick mixture that can be beaten to incorporate air and avoid lumps.
  - Beat the mixture well for 5 - 10 minutes using a wooden spoon to incorporate as much air as possible.
  - When the surface of the batter is filled with air bubbles, add the remaining of the liquid to obtain the right consistency.
  - Cover the bowl and leave to stand so that the starch grains can absorb the liquids before cooking.

Any 3 x 2 = (6 marks)

- (b) Reasons for including fruit salad in a meal
- improves appetite/makes the meal attractive/appealing
  - provides nutrients in the meal
  - provides variety in the menu
  - provides variety in the colour
  - provides variety in the texture
  - provides variety in the flavour
  - provides roughage / assists in digestion

Any 6 x 1 = (6 marks)

- (c) Influence of the following factors on consumer buying.
- (i) Inflation: prices increase but income remains the same, thus reducing the purchasing power of a consumer.
- (ii) Family set up: the stage at which the family is dictates what is to be bought.
- (iii) Time and energy: any limitation of time and energy will affect the shopping as one may not have time to do comparative shopping.
- (iv) Self-image: The desire to portray a certain status may influence one to spend above their means

Well explained 4 x 2 = (8 marks)

24. (a) Qualities of a well made cuff
- The cuff and the undercuff should be of the same size.
  - Even width on both the cuff and the undercuff.
  - Should be flat
  - Good knife edge
  - The right proportion to the rest of the garment
  - Should fit the wearer well

Any 4 x 1 = (4 marks)

(b) Classification of laundry equipment

- For washing, for example basins, buckets, laundry brushes, boilers, washing machines
  - For drying, for example clotheslines, pegs, drying racks, dryers, mangles
  - For finishing, for example iron box, ironing board, ironing surfaces
  - For storage, for example drawers, cupboards, trunks
- (Classification 4 x 1 = 4 marks. Examples  $8 \times \frac{1}{2} = 4$  marks; Total 8 marks)

(c) Factors to consider when choosing a seam in garment construction

- Type of fabric  
Light weight fabrics will require different seams from heavy weight fabrics
- Type of garment  
Some garments require stronger seams than others depending on their use e.g overalls require stronger seams than inner garments
- The style of garment  
The seam chosen should emphasis the style feature of the garment eg princess line dress may require top stitching the seams.
- The effect desired  
If a seam is to be seen on the right side, one could choose a conspicuous seam for a decorative effect eg machine fell seam on denim trousers and skirts.
- The position of the seam  
Some seams are more suitable on certain positions of garments than others eg a plain and double - stitched seam is more appropriate for armholes.
- The shape of the area  
Some seams are more suitable on straight edges and others on curved edges.

(Any 4 factors 4 x 1 = 4 marks

(Each factor correctly explained 4 x 1 = 4 marks

(Total = 8 marks)

25. (a) Information found on a receipt of goods sold

- Name and address of the seller
- Date of the sale
- An exact description of goods sold
- The quantity of goods sold
- The price charged.

Any 4 x 1 = 4 marks

(b) Ways of ventilating a room using windows

- Louvre windows - they open simultaneously and let in fresh air while preventing raindrops from entering.
  - Fanlight windows - they open towards the outside and are supported at the centre base by a latch.
  - Vertically pivoted windows - they open vertically. Half of the window opens towards the inside and the other half towards the outside.
  - The window opens to the outside only.
  - Horizontally pivoted window - these open horizontally. Half of the window opens towards the inside and the other half towards the outside.
  - Gliding windows - these open by gliding mainly from side to side.
- Any 4 well explained  $4 \times 2 = (8 \text{ marks})$

(c) Factors that may affect normal foetal development

- Alcohol consumption by the mother  
May cause the baby to be underweight during birth
  - Smoking by the mother - may cause underweight and respiratory diseases.
  - Trauma  
Any unpleasant experience that causes distress for an expectant mother can cause miscarriage.
  - Drugs  
May cause the baby to be underweight during birth, others may lead to miscarriage.
  - German measles  
May deform the foetus if it occurs during the first three months of pregnancy.
  - Nutrient deficiency  
May cause the baby to be mentally and physically retarded.
  - STIs may cause : still births, damage to nervous system, blindness, eye and ear infections, genital herpes.
  - HIV/AIDS: the child gets infected with HIV.
- Any 4 well explained =  $4 \times 2 = (8 \text{ marks})$



	DESCRIPTION	MAXIMUM SCORE	ACTUAL SCORE	REMARKS
1.	<b>PRESENTATION</b>			
(a)	Work well pressed (1) and folded ( $\frac{1}{2}$ )	1 $\frac{1}{2}$		
(b)	Label ( $\frac{1}{2}$ ) firmly sewn (1) without concealing details ( $\frac{1}{2}$ ) and on a single fabric ( $\frac{1}{2}$ )	2 $\frac{1}{2}$		
(c)	Pins/needles ( $\frac{1}{2}$ ) unnecessary tacking threads ( $\frac{1}{2}$ ) and loose threads( $\frac{1}{2}$ ) removed.	1 $\frac{1}{2}$		
(d)	Made up for one leg (1)	1		
	<b>Sub-total</b>	<b>6<math>\frac{1}{2}</math></b>		
2.	<b>CUTTING OUT</b>			
(a)	All five pieces cut out (5 x $\frac{1}{2}$ )	2 $\frac{1}{2}$		
(b)	Smooth cutting of the short front (1) and on straight grain(1)	2		
(c)	Smooth cutting of the short back (1) and on straight ( $\frac{1}{2}$ ) grain (1)	2		
(d)	Smooth cutting of the pocket ( $\frac{1}{2}$ x 2) and on straight grain ( $\frac{1}{2}$ x2)	2		
(e)	Cutting of the waistband ( $\frac{1}{2}$ ) on fold ( $\frac{1}{2}$ )	1		
(f)	Waistband CF on straight grain (1)	1		
	<b>Sub-total</b>	<b>10<math>\frac{1}{2}</math></b>		
3.	<b>WAIST DART</b>			
(a)	Straight stitchery (1) tapering to nothing (1)	2		
(b)	Correct length of dart 6.5cm to within 2mm (6.3 to 6.7cm) (1)	1		
(c)	Correct width of dart 0.8 cm to within 2 mm (0.6 to 1 cm) (1)	1		
(d)	Dart pressed (1) towards CB (1)	1		
(e)	Dart flat on RS ( $\frac{1}{2}$ ) and on WS ( $\frac{1}{2}$ )	1		
(f)	Dart secured at the point ( $\frac{1}{2}$ )	$\frac{1}{2}$		
	<b>Sub-total</b>	<b>6<math>\frac{1}{2}</math></b>		

	DESCRIPTION	MAXIMUM SCORE	ACTUAL SCORE	REMARKS
4.	<b>IN-SEAM POCKET</b>			
(a)	Upper pocket attached to short front (1) with straight stitchery (1) and RS together (1) away from the seamline (1).	4		
(b)	Lower pocket attached to short back (1) with straight stitchery (1) and RS together (1) away from the seamline (1).	4		
(c)	Notches matching/neatened ( $\frac{1}{2} \times 2$ ) matching (1) on WS.	1		
(d)	Correct position of pocket (by impression (1) and good hang (1)	2		
(e)	Pocket reinforced at upper (1) and lower point (1) pocket mouth open (1)	3		
(f)	Smooth stitchery of curved edges of pocket bag (2).	2		
	<b>Sub-total</b>	16		
5.	<b>OPEN SEAM (ABOVE AND BELOW POCKET)</b> (If not open seam award zero)			
(a)	Straight stitchery of seam above pocket ( $\frac{1}{2}$ ) and below pocket (1).	$1\frac{1}{2}$		
(b)	Seam well neatened above pocket ( $\frac{1}{2} \times 2$ ) and below (1x2)	3		
(c)	Evenness of seam above pocket ( $\frac{1}{2} \times 2$ ) and below pocket (2)	3		
(d)	Seam allowance clipped above the pocket ( $\frac{1}{2}$ ) pressed open ( $\frac{1}{2}$ ) and flat WS ( $\frac{1}{2}$ ) RS ( $\frac{1}{2}$ )	2		
(e)	seam allowance clipped below the pocket ( $\frac{1}{2}$ ) and seam pressed open ( $\frac{1}{2}$ ) and flat WS ( $\frac{1}{2}$ ) and RS ( $\frac{1}{2}$ )	2		
	<b>Sub-total</b>	$11\frac{1}{2}$		

	DESCRIPTION	MAXIMUM SCORE	ACTUAL SCORE	REMARKS
6.	<b>DOUBLE STITCHED SEAM</b> (If not double stitched seam award zero)			
(a)	First row of stitchery made with straight stitches.	1		
(b)	Raw edges well tucked under.	1		
(c)	Second row of stitchery made with straight stitches WS (1) and on RS (1).	2		
(d)	Evenness of seam (1) and correct size 1 cm to within 2mm (0.4 cm to 0.8 cm) (1).	2		
(e)	Flatness of seam on RS ( $\frac{1}{2}$ ) and on WS ( $\frac{1}{2}$ ).	1		
(f)	Fell facing back of short (1).	1		
	<b>Sub-total</b>	<b>8</b>		
7.	<b>KNIFE PLEATS</b> If not knife pleates award zero.			
(a)	Pleats pressed towards the same direction ( $\frac{1}{2}$ x 2)	1		
(b)	Pleats made on three layers of fabric (1 x 2)	2		
(c)	Correct number of pleats made (two pleats) (1 x 2)	2		
(d)	Pleats well pressed and flat at the waistband (1 x 2)	2		
(e)	Correct width of pleats 1.5 cm to within 2mm (1.3 cm to 1.7cm) (1 x 2)	2		
	<b>Sub-total</b>	<b>9</b>		

	DESCRIPTION	MAXIMUM SCORE	ACTUAL SCORE	REMARKS
8.	<b>ATTACHING WAISTBAND</b>			
(a)	First attachment line made with straight stitchery (mark by impression) 1 x 2	2		
(b)	Seam allowance evenly trimmed ( $\frac{1}{2}$ x 2) (see through light).	1		
(c)	Raw edges well tucked under ( $\frac{1}{2}$ x 2) with tacking stitches ( $\frac{1}{2}$ x 2).	2		
(d)	Even width of the waistband on RS and RS hemmed side (1 x 2) and correct width 3.5 cm to within 2 mm. (3.3 cm to 3.7 cm) (1 x 2).	4		
(e)	Hemming stitches worked from right ( $\frac{1}{2}$ ) to left ( $\frac{1}{2}$ ).	1		
(f)	Hemming stitches even (1) and not showing on RS(1).	2		
	<b>Sub-total</b>	<b>12</b>		

	DESCRIPTION	MAXIMUM SCORE	ACTUAL SCORE	REMARKS
9.	<b>HEM MANAGEMENT</b>			
(a)	Edge neatened with straight stitchery (1 x 2).	2		
(b)	Evenness of hem depth (1 x 2) and raw edges concealed ( $\frac{1}{2}$ x 2).	3		
(c)	Correct depth of finished hem 2.5 cm to within 3 mm (2.2 cm to 2.8 cm) (1 x 2).	2		
(d)	Flatness of hem on the RS (1) and WS (1).	2		
(e)	Tacking stitches straight ( $\frac{1}{2}$ ) with no knots ( $\frac{1}{2}$ ).	1		
	<b>Sub-total</b>	<b>10</b>		
	<b>TOTAL</b>	<b>90</b>		
	<b>Final mark = <math>\frac{\text{Actual Score}}{2}</math></b>	<b>45</b>		