Effects of heat on foods

Light, air, water or heat may affect nutrients in foods. To retain nutrients in foods, we must pay attention when we store, prepare, cook and serve them.

Basic knowledge on heat
1. Heat is necessary in cooking.
2. Heat can be passed on to food through conduction, convection and radiation.
3. Heat is passed to food through water, oil or air.
4. Cooking of food includes the use of hot water, hot oil and dry heat.

Group these cooking methods into the corresponding category:
- Boiling (煲), deep frying (炸), pressure cooking (高壓烹調), steaming (蒸), stewing (炆), stir frying (炒), baking (焗), barbecuing (燒烤), grilling (烘), shallow frying (煎), roasting (烤), simmering (文火煲),

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<th>Methods of cooking</th>
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<td>Hot water (Moist heat)</td>
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<td>Hot oil</td>
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<td>Dry heat</td>
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## Effects of heat on nutrients

<table>
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<th>Nutrient</th>
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| **Proteins** e.g. | - coagulate at about 75 °C, - extract juice form meat, - turn brown in dry heat. | 1. Egg changes from liquid to ___________.  
2. Meat and fish changes from soft to hard.  
3. Egg white changes from **transparent** to **opaque**.  
4. Raw meat is red and cooked meat is ___________. |
| | - become **tough**, **dry** and **indigestible** if over cooked. - will be **burnt** if overheated. | 1. Egg custard will **curdle**.  
2. Grill cheese becomes **stringy** and hard.  
3. Roast beef becomes **tough** and hard. |
| **Starch** e.g. | - starch grain will **swell** when heated. - absorbs water, swells and **soften** in moist heat, making it easy to digest. - dissolves in liquid and **thicken** the mixture. - turns brown and dry out in dry heat. | 1. Making of pop corn shows effect of dry heat.  
2. Boiled rice is soft, **sticky** and easy to digest.  
3. Cornflour used as **thickening** in sauce making.  
4. Toasted bread is brown and hard. |
| | - will be burnt and indigestible if overheated. | |
| **Sugar** | - dissolves in hot water. - melts and turns to **golden** or **caramel** in dry heat | 1. Used as seasoning and add taste to food.  
2. Used in making of **syrup**.  
3. Used to add colour in cooking  
  e.g. use of ___________ in barbecuing |
| | - turns to dark brown and burnt if overheated. | |