- 1. **NOT GIVEN** There is nothing in the text relating to this and so the answer is 'not given' in the text.
- 2. **FALSE** Popular in different civilisations, the benefits of soap finally managed to appeal to a wide European population in the 17th century
- 3. **TRUE** The first soap makers were Babylonians, Mesopotamians, Egyptians, as well as the ancient Greeks and Romans. All of them made soap by mixing fat, oils and salts.
- 4. **FALSE** The demand for early soap was high, but it was very expensive and there was a monopoly on soap production in many areas.
- 5. **Impurities** The first part of the manufacturing process is to heat the raw materials to remove impurities.
- 6. **alkali** This is followed by saponification, which involves adding a powerful alkali to the heated raw materials. This releases the fatty acids (known as 'neat soap') that are the basis of the soap and a valuable byproduct, glycerine.
- 7. **evaporation** The glycerine is recovered by chemical treatment, followed by evaporation and refining.
- 8. **moisture (content)** The next processing for the soap is vacuum spray drying to convert the neat soap into dry soap pellets. The moisture content of the pellets will be determined by the desired characteristics of the soap bar.
- 9. **fragrance** The first unit in the line is a mixer, called an amalgamator, in which the soap pellets are blended together with fragrance, shades and all other ingredients.
- 10. **(soap) press** Finally, the mixture is cut into bar-size units and stamped into its final shape in a soap press.
- 11. **recipes** The history of liquid soaps and gels started only recently, when the technological and chemical advancements of the modern age enabled countless inventors to start experimenting with more complicated recipes.
- 12. **residue** The main difference between liquid soaps and shower gels is that gels do not contain saponified oil. They are based mostly on petroleum, have numerous chemical ingredients that help the easier cleaning of skin, lather better in hard water areas, do not leave a residue on the skin
- 13. **(skin) irritations** They are based mostly on petroleum, have numerous chemical ingredients that help the easier cleaning of skin, lather

better in hard water areas, do not leave a residue on the skin and bathtub, and are in a balanced PH state, so that they do not cause skin irritations.

- 14. nearest star The Sun is our nearest star
- 15. **mass** The Sun is the largest body in the Solar System and it is also the most massive, containing 99.9 per cent of the total mass of all the planets, moons, dwarf planets, asteroids and comets combined.
- 16. **radiation** But it also brings many potential hazards, from the continual flow of hazardous radiation that always lurks just beyond Earth's atmosphere, to the sporadic and violent space weather that threatens much of our society's infrastructure.
- 17. **density** Given that the Sun has a volume that is over a million times that of the Earth, yet contains only 330,000 times the mass, we can immediately deduce that its average density is far lower than that of a terrestrial planet.
- 18. **pressure** For nuclear fusion to occur, matter needs to be under conditions of tremendous pressure and of extreme heat, so that the electric repulsion can be overcome, and the nuclei get close enough to smash into each other.
- 19. **hydrogen** The Sun converts 600,000 million kilograms of hydrogen to helium every second to sustain its phenomenal energy output.
- 20. **The Radiation Zone** The Sun's core is approximately 15,000,000 degrees Celsius and is the site of the nuclear fusion. The energy from the core travels outwards through the radiation zone by the transfer of the energy from one molecule to another.
- 21. **The Photosphere** Outside the convection zone is the photosphere, which is approximately 500 kilometres thick and is the surface layer of the sun
- 22. **The Corona** Beyond, there is a thin layer of gas that surrounds the photosphere called the chromosphere. Finally, the corona is another layer of gas that extends a long way outside of the Sun.
- 23. **6 billion years** The Sun has sufficient hydrogen at the right temperature and density to continue creating helium for a further six billion years.
- 24. **(A) planetary nebula** Eventually, the outer envelope of the red giant will be lost, expanding away to form a planetary nebula.
- 25. **(The) magnetic energy** The magnetic energy in an exceptionally powerful sun flare can heat and speed up a huge cloud of charged particles to form a coronal mass ejection.

- 26. **Power cuts** The major effect for humans of a coronal mass ejection is on our satellites, which can be seriously damaged. Power cuts on Earth can also take place.
- 27. **YES** The mother in particular, for biological and societal reasons, is under stress to fulfill the expectations that she and society puts on her.
- 28. **NO** Winnicott's notions of the 'good-enough' mother and the facilitating environment that he described remain important in the study of child development.
- 29. **NOT GIVEN** There is nothing in the text relating to this and so the answer is 'not given' in the text
- 30. **NO** This key role for adults in today's world has led to this subject being intensively examined and various theories of parenting being created.
- 31. **behaviour** Social learning theory is based on the assumption that children's behaviour will improve when appropriately reinforced; good behaviour is rewarded and bad behaviour is either ignored or appropriately sanctioned.
- 32. **strategies** Social learning theory-based programmes teach parents strategies for punishing child misconduct and rewarding positive behaviour.
- 33. **(emotional) bond** Attachment theory is based on the notion that an infant's ability to form a strong emotional bond with their primary caregiver is a natural part of its development.
- 34. **understanding** Programmes based on attachment theory therefore aim to improve parental sensitivity by increasing parents' understanding of their children's requirements and attachment related conduct.
- 35. **risk-taking** For this reason, many parenting programmes include elements that encourage parents to allow their children to experience risk-taking amidst high levels of supervision.
- 36. **protective factors** Programmes based on this model consider ways to strengthen protective factors in order to manage any on-going risks.
- 37. **unconscious process** Winnicott's idea of a facilitating environment created for a child by a 'good-enough mother', who is supported by the adults around her, rests easily alongside the theory of attachment. Winnicott's facilitating environment is provided by an unconscious process within an ordinary mother who is fond of her baby.
- 38. **maturational processes** The good-enough mother then continues to provide an environment that facilitates healthy maturational processes in her baby.

- 39. **omnipotence** By containing her own hateful feelings about her baby, and using them to intuit the baby's terror and hate, the good-enough mother facilitates her baby's thoughts and expressions of omnipotence by adapting to his needs until such time as he gradually begins to feel safe enough to relinquish these feelings.
- 40. **(undue) expectations** Winnicott intended to take the pressure off women who became mothers, but critics have argued that Winnicott's idea of the good-enough mother has placed the undue expectations upon the 'real' mother that she must shoulder most of the responsibility for the care of her baby.