Unit 5 - Descriptive Questions.

1). Summarise the evidence for the kinetic theory of matter.

2). What assumptions are made for the kinetic theory of matter?

3). Describe how you would measure the specific heat capacity of water.

4). What is an ideal gas?

5). Describe the evidence for latent heat.

6). Describe the evidence for an absolute zero of temperature.

7). Describe how you would verify Boyle's law.

8). Describe how you would verify Charles law.

9). Describe how you would verify the Pressure law.

10). Outline the origins of 'background radiation'.

11). Describe the dangers associated with radioactivity.

12). Summarise the evidence for the existence of three different forms of radiation.

13). Explain what is meant by the terms **spontaneous** and **random** as associated with nuclear decay.

14). Describe how you would measure the half-life of a short lived (1-2 minutes) nuclear isotope.

15). Explain what is meant by the term 'isotope'.

16). Explain how radioactivity can be used to date archaeological specimens.

17). Describe how radioactivity can be used in medicine.

18). Explain what is meant by 'simple harmonic motion'.

19). Describe what happens to the energy of the mass on the end of a spring oscillating vertically with SHM.

20). Describe the differences between 'Free', 'Damped' and 'Forced' oscillations.

21). Explain the conditions necessary for 'resonance' to occur.

22). Describe three uses of resonance in everyday life.

23). Explain what is meant by 'gravitational field strength'

24). Describe two examples of the 'inverse square law' in nature.

25). Explain why astronauts in the ISS appear to be weightless.

26). Outline, using a diagram, the life cycle of a star.

27). Explain the main features of a Hertzsprung-Russell diagram.

28). Explain what is meant by an ‘astronomical standard candle’.

29). Describe the differences between a neutron star and a white dwarf star.

30). Explain what is meant by the term ‘black body radiator’.

31). Explain how energy is released in a nuclear fusion reaction.

32). Explain how energy is released in a nuclear fission reaction.

33). Describe how binding energy per nucleon varies with nucleon number.

34). Explain what is meant by the ‘Doppler effect’.

35). Describe three uses of the Doppler effect.

36). Explain what is meant by the red shift of a star.

37). Summarise the evidence for an expanding universe.

38). Explain the evidence for an expanding universe.

39). Describe the possible scenarios for the end of the universe.

40). Explain what is meant by ‘Dark Matter’.