UNIT 3: The Study of the Universe

Chapter 7: The Night Sky

7.1: Ancient Astronomy

- Calendar
- Early Astronomers
- Early Clocks
- Inferring Earth’s Spherical Shape
- Earth’s Curved Shadow

7.2: The Constellations

- Constellation
- Patterns in the Night Sky
- Light-year
- Apparent Magnitude
- Names of Constellation and Big Dipper
- Viewing Different Constellations
- Latitude

7.3: Movements of Earth and the Moon

- Earth’s Motions
- Why do we experience seasons
- Tides
- Ellipse and Eclipse
- phases of the Moon
- lunar and solar eclipse
- gravitational force

7.4: Meet Your Solar System

- The Planets
- Solar System
- Retrograde motion
- Astronomical unit and orbital radius
- Comets and Asteroids

Chapter 8: Exploring Our Stellar Neighbourhood

8.1: Exploring Space

- Electromagnetic radiation
- Refracting telescope
- Reflecting telescope
- Satellite
- Planetary orbiters and landers
  - Landers and satellites

8.2: Exploring the Sun

- Solar nebula theory
- Star
- Nebula
• Protostar
• Nuclear fusion
• Photosphere
• Sunspot
• Solar wind
• A growing sun, features of the sun, the importance of the sun

8.3: Exploring other stars
• Luminosity
• Absolute magnitude
• Spectroscope
• Spectral lines
• Super nova
• How stars evolve
• Black holes

Chapter 9: The Mysterious Universe

9.1: Galaxies
• Discovery of the galaxies
• Milky way
• Galaxy
• Star cluster
• Open cluster
• Globular cluster
• Local group
• Supercluster

9.2: The Universe
• Edwin Hubble
• The Doppler Effect
• Redshift and Blueshift
• The Big Bang Theory
• The James Webb Space Telescope
• Dark Matter and Dark Energy (9.3)

Review Exercises:

• Chapter 7 Review: pg.312 – 313 #1-21
• Chapter 8 Review: pg.356 # 1-18
• Chapter 9 Review: pg.386 – 387 #1 – 19

Unit Review: pg. 392-393 #1-33 (complete all questions that apply to concepts mentioned above)