Year 12 Revision List - Assessment Fortnight

(16th – 27th January 2023)

These are the topics you will need to revise. Your teachers will give you access to the materials you need. Most of the resources for revision can be found on Teams. You should be making time to work extra hard in the weeks leading up to Assessment Fortnight!

Biology

You will be sitting two, one-hour Biology papers which will contain questions on the following topics:

Paper 1 (Unit 1 Biological Molecules Miss Bartley)
Food tests
Lipids
Water
ATP
Enzymes
Semi-conservative replication of DNA

Paper 2 (Unit 2 Cells Mrs Sherlock)
Cell Structure
Viewing cells
Required practical 2 (Root tip squashes and mitosis)
Transport (including Required Practical 3 Water Potential)
Immunity – defence mechanisms

Revision materials can be accessed via your Microsoft TEAM. You can also use your text book/ revision guide, Seneca learning and www.physicsandmathstutor.com

Chemistry

You will be sitting two, one-hour Chemistry papers which will contain questions on the following topics:

Paper 1 (Organic Chemistry – Dr Cole)
Nomenclature and Isomerism
Alkanes
Ozone reactions
Alkenes

Paper 2 (Physical Chemistry – Miss Shufflebotham)
Atomic Structure
Amount of Substance
Bonding

Revision materials can be accessed via your Microsoft TEAM. You can also use your text book/ revision guide, Seneca learning, www.physicsandmathstutor.com and www.a-levelchemistry.co.uk

Geography

Physical

1. The carbon cycle
2. Global distribution, and size of major stores of carbon – lithosphere, hydrosphere, cryosphere biosphere, atmosphere.
3. Factors driving change in the magnitude of these stores over time and space, including flows and transfers at plant, sere and continental scales. Photosynthesis, respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering.
4. Changes in the carbon cycle over time, to include natural variation (including wild fires, volcanic activity) and human impact (including hydrocarbon fuel extraction and burning, farming practices, deforestation, land use changes).
5. The carbon budget and the impact of the carbon cycle upon land, ocean and atmosphere, including global climate.
   Water, carbon, climate and life on Earth
6. The key role of the carbon and water stores and cycles in supporting life on Earth with particular reference to climate. The relationship between the water cycle and carbon cycle in the atmosphere. The role of feedbacks within and between cycles and their link to climate change and implications for life on Earth. Human interventions in the carbon cycle designed to influence carbon transfers and mitigate the impacts of climate change.
7. Case study of a tropical rainforest setting to illustrate and analyse key themes in water and carbon cycles and their relationship to environmental change and human activity.

Human

1. The nature and importance of places - The concept of place and the importance of place in human life and experience.
2. Changing places and relationships - the ways in which the following factors: relationships and connections, meaning and representation, affect continuity and change in the nature of places and our understanding of place and
3. Relationships, connections, meaning and representation - The impact of relationships and connections on people and place with a particular focus on: changing demographic and cultural characteristics **or** How the demographic, socio-economic and cultural characteristics of places are shaped by shifting flows of people, resources, money and investment, and ideas at all scales from local to global.
4. Meaning and representation - The importance of the meanings and representations attached to places by people with a particular focus on people's lived experience of place in the past and at present.
5. Place studies- Local place study exploring the developing character of a place local to the home or study centre. Contrasting place study exploring the developing character of a contrasting and distant place.

Revision guides and scanned text book are on teams. Seneca as well

History

War of the Roses (Unit One)
French Revolution to the execution of Louis XVI (Unit Two)
All resources on TEAMS

AS Maths - 1 Test

A 1-hour Test, based on the content you have covered so far in Year 12 Pure, which includes Chapters 1 – 6.

1. Algebraic Expressions
    a. Index Laws
    b. Expanding Brackets
    c. Factorising
    d. Negative and fractional indices
    e. Surds
    f. Rationalising Denominators
2. Quadratics
    a. Solving Quadratic Equations
    b. Completing the Square
    c. Functions
    d. Quadratics Graphs
    e. The Discriminant

3. Equations and Inequalities
    a. Linear Simultaneous Equations
    b. Quadratic Simultaneous Equations
    c. Simultaneous Equations in graphs
    d. Linear Inequalities
    e. Quadratic inequalities
    f. Inequalities on graphs
    g. Regions
4. Graphs and Transformations
    a. Cubic Graphs
    b. Quartic Graphs
    c. Reciprocal Graphs
    d. Points of Intersection
    e. Translating Graphs
    f. Stretching Graphs
    g. Transforming Functions
5. Straight Line Graphs
    a. Y=mx+c
    b. Equations of straight lines
    c. Parallel and perpendicular lines
    d. Length and Area
6. Circle
    a. Midpoints and Perpendicular bisectors
    b. Equation of a circle
    c. Intersections of straight lines and circles
    d. Use tangents and chord properties
    e. Circle and triangles.

Physics

You will be sitting two, one-hour Physics papers which will contain questions on the following topics:

Paper 1 (Quantum Mechanics – Miss Smith)

- Particles and radiation
- Electromagnetic radiation and quantum phenomena

Paper 2 (Waves – Mr Harvey)

- Progressive and stationary waves
- Reflection, diffraction and interference

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English Literature OCR H472: Paper One, 2 hours

Section A: *Hamlet*

Hamlet part a: Analyse the ways in which Shakespeare shapes meaning in the play, through language, form and structure.

Revise: characterisation, plot, themes, key quotations, writer's methods

Hamlet part b: Explore the play informed by different interpretations across time.

Revise: critical interpretations of the play across time, including stage and film adaptations. Key quotations and episodes in the text, linking to critical theory.

BTEC Applied Science

You will be aware that you have an ACTUAL exam which consists of three papers; one each for Biology, Chemistry and Physics. You will be assessed on all of Unit 1: Principles & Applications of Science.

January exams

Tue 17 Jan		13:30		00:40	BTEC	31617H1B	Principles and Applications of Science Unit1 - Biology
Wed 18 Jan		09:00		00:40	BTEC	31617H1C	Principles and Applications of Science Unit 1 - Chemistry
Wed 18 Jan		13:30		00:40	BTEC	31617H1P	Principles and Applications of Science Unit 1 - Physics

You can use your work booklet from Mr Bolam to revise for all subjects. BTEC Applied Science Help videos are available on youtube:

- Chemistry: https://www.youtube.com/watch?v=w7LEWqguIKw&list=PLEgTEswuSSm3syucymHYovbqGqj3aIrt0
- Biology: https://www.youtube.com/watch?v=KxiLUIwuav8&list=PLEgTEswuSSm2_QkE7zuIW6L9vKz2PTb4F
- Physics: https://www.youtube.com/watch?v=kH0FIMTXHcM&list=PLEgTEswuSSm3vGpaLOsYIMaDKDDn8MUAf

Biology: Cell theory; Microscopy; Animal cells; Plant cells; Bacteria cells; Gram staining; Specialised cells; Epithelial tissue; Muscle tissue; Nervous tissue.

Chemistry: Electronic structure; Ionic bonding; Covalent bonding; Metallic bonding; Intermolecular forces; Quantises used in chemistry; The Periodic table; Physical properties of elements; Chemical properties of elements.

Physics: Waves; Transverse and longitudinal; Diffraction gratings; Stationary waves resonance; Principles of fibre optics; Optical fibres; Electromagnetic waves.

Health and Social Care (single)

You will be sitting a one-hour paper on Unit 3: Health, Safety and Security in Health and Social Care Settings. The paper will cover section 1 and 2 of the specification:

1. **Understand potential hazards in health, social care and child care environments**

1.1. Types of hazards, i.e.

- environmental (e.g. slip and trip hazards)
- biological (e.g. waste, infection)
- chemical (e.g. medicines, cleaning materials)
- psychological (e.g. stress, fatigue)
- physical (e.g. noise, radiation)
- musculoskeletal (e.g. manual handling, DSE (display screen equipment))
- working conditions (e.g. temperature, noise, travel)
- working practices (e.g. working hours, supervision)
- lack of security systems (e.g. door locks, alarm systems)

1.2. Potential impacts of hazards for individuals who require care or support, employees and employers, i.e.

- injury or harm
- illness
- poor standards of care
- financial

1.3. Harm and abuse, i.e.

- intentional abuse (e.g. financial abuse)
- unintentional abuse (e.g. poor care provided)
- effects of abuse (e.g. illness, injury, fear)

1.4. Types of settings, i.e.

- health environment (e.g. hospital, GP surgery)
- care environment (e.g. residential care home, individual's home)
- child care environment (e.g. nursery, school)
- public environment (e.g. shopping centre, park)
- transport (e.g. minibus, ambulance)

2. **Understand how legislation, policies and procedures promote health, safety and security in health, social care and child care environments**

2.1. Legislation, i.e.

- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- Food Safety Act 1990
- Food Safety (General Food Hygiene) Regulations 1995
- Manual Handling Operations Regulations 1992
- Reporting of Injuries, Diseases and Dangerous Regulations (RIDDOR) 2013
- Data Protection Act 1998
- Control of Substances Hazardous to Health (COSHH) 2002
- Civil Contingences Act 2004

Psychology

You will complete one exam style paper. This paper will take one hour 30 minutes. The topics will be:

- Memory
- Approaches
- Research Methods

You will also complete a 60-minute knowledge test (85 marks). The topics will be:

- Research Methods
- Approaches

Religious Studies

See Teams for revision resources.

Christianity:

1A Jesus - His birth	Consistency and credibility of the birth narratives (Matthew 1:18-2:23; Luke 1:26-2:40)
	harmonisation and redaction
	interpretation and application of the birth narratives to the doctrine of the incarnation (substantial presence and the kenotic model).
1B Jesus - His resurrection	The views of Rudolf Bultmann and N.T. Wright on the relation of the resurrection event to history
	interpretation and application to the understanding of death, the soul, resurrected body and the afterlife, with reference to Matthew 10:28; John 20-21; 1 Corinthians 15; Philippians 1:21-24.
2A Religious concepts – the nature of God:	Is God male? The issue of male language about God; the pastoral benefits and challenges of the model of Father; Sallie McFague and God as Mother.
	Can God suffer? The impassibility of God; the modern view of a suffering God illustrated by Jurgen Moltmann (The Crucified God)
2B Religious concepts – the Trinity	The need for the doctrine of the Trinity: the nature and identity of Christ (issues of divinity and preexistence) and Christ's relationship with the Father (co-equal and co-eternal
	The origin of the Holy Spirit: the filioque controversy.

2C Religious concepts – the Atonement	Three theories of the Atonement (which are not mutually exclusive): the death of Jesus as Christus Victor (with reference to the liberation of humanity from hostile powers)
	The death of Jesus as a substitution (both the belief that Jesus died as a substitute for humanity, and the belief that only the divine-human Jesus could act as a sacrifice by God for the sake of humanity)
	the death of Jesus as a moral example (of how to live and die).
	The underlying assumptions about the need for divine forgiveness and the conflict between the wrath and love of God in theories of the Atonement.

Philosophy:

1A Inductive arguments – cosmological	Inductive proofs; the concept of 'a posteriori'
	Cosmological argument: St Thomas Aquinas' first Three Ways - (motion or change; cause and effect; contingency and necessity).
	The Kalam cosmological argument with reference to William Lane Craig (rejection of actual infinities and concept of personal creator).
1B Inductive arguments – teleological	St Thomas Aquinas' Fifth Way - concept of governance; archer and arrow analogy
	William Paley's watchmaker - analogy of complex design
	F. R. Tennant's anthropic and aesthetic arguments - the universe specifically designed for intelligent human life.
1C Challenges to inductive arguments	David Hume - empirical objections and critique of causes (cosmological).
	David Hume - problems with analogies; rejection of traditional theistic claims: designer not necessarily God of classical theism; apprentice god; plurality of gods; absent god (teleological).
	Alternative scientific explanations including Big Bang theory and Charles Darwin's theory of evolution by natural selection.

Ethics:

1A Divine Command Theory	God as the origin and regulator of morality; right or wrong as objective truths based on God's will/command, moral goodness is achieved by complying with divine command; divine command a requirement of God's omnipotence; divine command as an objective meta-physical foundation for morality.
	Robert Adams' 'Modified Divine Command Theory' (divine command based on God's omnibenevolence).
	Challenges: the Euthyphro dilemma (inspired by Plato);
	arbitrariness problem (divine command theory renders morality as purely arbitrary);
	pluralism objection (different religions claim different divine commands).
1B Virtue Theory	Ethical system based on defining the personal qualities that make a person moral; the focus on a person's character rather than their specific actions
	Aristotle's moral virtues (based on the deficiency; the excess and the mean);
	Jesus' teachings on virtues (the Beatitudes).
	Challenges: virtues are not a practical guide to moral behaviour; issue of cultural relativism (ideas on the good virtues are not universal); virtues can be used for immoral acts
1C Ethical Egoism	Agent focused ethic based on self-interest as opposed to altruism; ethical theory that matches the moral agent's psychological state (psychological egoism); concentration on long term self-interests rather than short term interests
	Max Stirner, is self-interest the root cause of every human action even if it appears altruistic?
	Rejection of egoism for material gain; union of egoists.
	Challenges: destruction of a community ethos; social injustices could occur as individuals put their own interests first; a form of bigotry (why is one moral agent more important than any other?).

Sport & Physical Activity (PE)

Unit 1 Body Systems and the effects of physical activity

See Teams for individual lessons / worksheets (in class resources).

LO1 skeletal system	Axial & appendicular skeleton Functions of skeleton 5 types of bone Classifications of joints (fixed / fused, slightly moveable, synovial joints) Structure and function of synovial joints Types of joint movements (flexion, extension, et al) Short-term and long-term effects of exercise on the skeleton
LO2 Muscular system	Name & label all major muscles of the body (anterior and posterior) Antagonistic pairs - Agonist, antagonist and fixator Structure and function of muscle fibres – 3 types of muscle fibre, characteristics and strengths / limitations of each, uses in sport Key words associated with muscles (page 10 in text book – hypertrophy et al) Short-term and long-term effects of exercise on muscles
LO3 Cardiovascular system	Structure of the heart and CV system, and roles of all components of heart Stroke volume, heart rate & cardiac output Structure of blood vessels (see key words on page 15) 5 different blood vessels (arteries, arterioles, capillaries, veins and venules) Components of blood Vascular shunt mechanism and pre-capillary sphincters Short-term and long-term effects of exercise on the cardiovascular system
LO4 Respiratory system	Structures of lungs and their roles Key words of respiratory system (page 17) Mechanics of breathing at rest and during exercise Gaseous exchange Tidal volume, breathing frequency and minute ventilation Lung volume changes during exercise Short-term and long-term effects of exercise on the respiratory system