



## **THE MALAWI NATIONAL EXAMINATIONS BOARD**

### **REGULATIONS AND SYLLABUSES FOR THE MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

**MANEB**

**JULY 2020**

**MSCE REGULATIONS AND SYLLABUSES - MANEB**

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**REGULATIONS AND SYLLABUSES FOR THE MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

**1.0 INTRODUCTION**

The Malawi National Examinations Board (MANEB) is an examining body responsible for developing, administering and processing of the national examinations. It was founded in 1987 as a result of a merger between the Malawi Certificate Examinations and Testing Board and the Examinations Section of the Ministry of Education. The Malawi Certificate Examinations and Testing Board was created in 1969 by an Act of Parliament to take charge of the process of localising the development and administration of the School Leaving Certificate Examinations at ordinary level.

From its origin, MANEB was principally responsible for management of three public examinations, namely; the Primary School Leaving Certificate of Education (PSLCE) Examination, Junior Certificate of Education (JCE) Examination and the Malawi School Certificate of Education (MSCE) Examination. Over the years its mandate expanded and included management of Primary Teacher Certificate of Education (PTCE) Examination and Malawi Craft Examination. The Malawi Craft Examinations was, however, moved to Ministry of Labour in the 2018/19 academic year as part of reforms under Public Service Reform initiative.

The effective and efficient pursuit of the aforementioned mandate requires concerted and coordinated effort which includes development of effective Regulations and Examination Syllabuses for the Malawi School Certificate of Education examination so that MANEB remains a highly credible examining body in the region and beyond.

The Regulations and Examination Syllabuses for MSCE will be an open and transparent approach to evaluating adherence to best assessment practices. The Regulations and Examination Syllabuses will give MANEB, candidates, teachers and all stakeholders the tools needed to revitalise the performance of candidates at national examinations and also assist MANEB raise level of the organisational achievement in national assessment.

This document outlines regulations during the following examination processes; registration of candidates, examination administration and processing, release of examination results and certification. The document also outlines contents of the assessment syllabuses for MSCE subjects and these include assessment aims, objectives, patterns and performance grade descriptors.

The document has two parts, the first part stipulates the regulations on the conduct of national examinations with regard to registration of candidates, administration of examinations and certification of successful candidates. The second part outlines the examination syllabuses for the subjects that are administered at MSCE level. The examination syllabus for each subject addresses the aims of the syllabus, assessment objectives for the particular subject, assessment format for the subject and performance grade descriptors expected to be displayed by candidates at MSCE.

## **2.0 REGULATIONS FOR THE MALAWI SCHOOL CERTIFICATE OF EDUCATION EXAMINATION**

MANEB is committed to achieve its mission of testing candidates for certification, selection and placement by developing and administering nationally and internationally recognized examinations for the social and economic development of Malawi. There is therefore need to ensure that management of examinations is uniform national wide and across the years. The regulations stipulated in this document would ensure standardized management of examinations and enhance a coordinated effort to realise MANEB's mission.

These regulations have linkages with other relevant policies and documentation such as the MANEB Act (1987), Policy and Procedures for Management of National Examinations, Rules and Regulations on the Conduct of National Examinations and all other Government regulations and policies.

The regulations would address a number of issues and among them are; eligibility of candidates, registration requirements, administration of the examination, release of results, awarding of candidates, issuing of certificates and administration of the examination to candidates with special education needs.

### **2.1 Eligibility of candidates**

The MSCE examination shall be taken by

- a. school (internal) candidates at the conclusion of the approved senior secondary school course
- b. external candidates who have been prepared with MSCE teaching syllabuses at an institution which has been approved by Ministry of Education (MoE) and MANEB.
- c. open distance and e-learning candidates who have been prepared with MSCE teaching syllabuses at an Open Day Secondary School approved by the Malwi College of Distance Education (MCDE).
- d. candidates who have attempted the MSCE examination before as school candidates and wish to re-sit the examination in subsequent years

### **2.2 Approval of examination syllabuses and examinations**

Examination syllabuses and examinations to be administered shall be approved by the Malawi National Examinations Board.

### **2.3 Equivalent standard of MSCE**

A pass with credit in a subject of the Malawi School Certificate of Education is equivalent to a pass at Ordinary level in a corresponding subject of the General Certificate of Education in the United Kingdom.

## **2.4 Subjects at MSCE**

There are twenty two subjects at MSCE and they are as follows:

<b>NO.</b>	<b>SUBJECT CODE</b>	<b>SUBJECT NAME</b>	<b>NUMBER OF PAPERS</b>
1	M132	Additional Mathematics	2
2	M012	Agriculture	2
3	M021	Bible Knowledge	2
4	M022	Biology	2
5	M023	Business Studies	2
6	M032	Chichewa	3
7	M038	Chemistry	2
8	M034	Clothing and Textile	2
9	M039	Computer Studies	2
10	M015	Creative Arts	2
11	M052	English	3
12	M061	French	3
13	M073	Geography	2
14	M081	History	2
15	M082	Home Economics	2
16	M131	Mathematics	2
17	M133	Metalwork	2
18	M164	Physics	2
19	M182	Religious and Moral Education	1
20	M199	Social Affairs	2
21	M201	Technical Drawing	2
22	M231	Woodwork	2

## **2.5 Entry requirements**

The entry requirements for MSCE shall be as follows:

- a. school candidates must enter for **at least six** subjects on their first entry, one of which must be English. The Ministry of Education also requires that all school candidates must enter for Mathematics on their first entry
- b. external candidates may enter for one or more subjects at a time
- c. There is no limit to the number of subjects candidates can enter for at any one examination but schools/institutions shall provide guidance to candidates on the combinations of subjects depending on the routes offered at the school/institution
- d. Schools/institutions must conform with the requirements in connection with Continuous Assessment and coursework in subjects with such requirements as set out in the current curriculum and/or as referred to in the MANEB's circulars

## **2.6 Registration of candidates**

MANEB shall:

- a. provide registration template to its approved examination centres to ensure uniformity in data capture
- b. issue circular letter to approved examination centres and stakeholders on commencement and closing dates for registration, payment of examination fees and ID fees and submission of registration documents to MANEB
- c. determine examination and ID fees rates from time to time
- d. charge penalty on late submission of ID photo collection forms per candidate's ID photo at a rate to be determined by MANEB from time to time
- e. **not effect changes/corrections of candidates' particulars and/ or subject entries after closure of the nominal roll verification process**

DEM<sub>s</sub> shall:

- a. ascertain that registration data for all schools in their respective districts is timely submitted to MANEB
- b. only accept examination registration data from centres which have remitted their centre administration fees to them

Head Teacher or his/her representative shall:

- a. sign for the entries, as confirmation that all the entries are correct
- b. observe deadlines for registration of candidates
- c. ensure that the maximum number of externals does not exceed 70% of the registered internal candidates
- d. ensure timely remittance of examination fees and ID fees to MANEB
- e. ensure timely depositing of examination fees and ID fees in relevant MANEB bank accounts as stipulated by MANEB
- f. submit candidates' signed registration spreadsheets and copies of deposit slips to DEM<sub>s</sub> as evidence of examination fees and ID fees payment
- g. ensure that schools without MANEB centre numbers shall be required to register their candidates as external candidates of nearby schools which have MANEB centre numbers, in liaison with the DEM
- h. ensure that serving teachers shall not register for examinations as candidates at the schools where they are teaching
- i. ensure that candidates register for examinations in MANEB approved examination centres
- j. ensure that they register candidates in liaison with District Education Managers (DEM<sub>s</sub>) and with guidance from MANEB
- k. be liable to pay a penalty fee at a rate determined by MANEB if they remit candidates' examination fees and ID fees later than the stipulated deadline

Candidates shall:

- a. pay examination fees and ID fees during registration

- b. verify the accuracy of registration data and sign against their names before final submission of the data to MANEB
- c. be liable to pay a penalty fee which shall be stipulated by MANEB from time to time if they pay examination fees and or ID fees later than the deadline
- d. **not** be refunded the paid examination fees.

**2.7 Transfer of candidates**

- a. a candidate shall sit for examination at the centre where he/she registered for the examination
- b. examination centres shall ensure that students who were suspended/expelled after registering for examinations sit for the examinations at the centre where they had registered for the examination
- c. examination centres shall ensure that students who have school fees balances write examinations at the centre where they registered for the examination
- d. examination centres shall request MANEB in writing to withhold results of candidate(s) who have school fees balance and/or any other issues with the school
- e. examination centres shall write MANEB to release withheld results as in (d) upon amicable resolution of the issues with the concerned candidate(s)
- f. MANEB shall not transfer candidate(s) from one examination centre to another

**2.8 Examination dates and timetable**

- a. examination dates shall be indicated on the examination timetables
- b. MANEB shall be responsible for compiling the examination timetables
- c. examination centres and other stakeholders shall be furnished with the examination timetable six months before the start of examinations
- d. schools shall display examination timetables on their notice boards for all candidates to see
- e. no changes shall be made on an official examination timetable unless under the directive of MANEB.

**2.9 Administration of examinations**

- a. Examinations shall be administered in MANEB approved Cluster or Lone Centres.
- b. Administration of Continuous Assessment (CA) activities that may contribute marks to the national examination shall be conducted following assessment guidelines laid down by MANEB.
- c. Examinations shall be administered during a period approved by MANEB.
- d. Administrators of examinations at an examination centre shall comprise a Supervisor, Invigilator(s) and a Security officer.
- e. Administrators of national examinations shall be briefed on proper conduct of examinations by MANEB and other stakeholders.
- f. No examination administrator shall be allowed to conduct national examinations without being briefed.
- g. No examination administrator shall be allowed to attempt answering examination questions in the course of administering an examination.

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- h. Supervisors, invigilators and security officers shall find their own accommodation and shall not be accommodated in houses owned or occupied by officials of the feeder schools or examination centres.
- i. Supervisors, invigilators and security officers shall not demand or receive anything of monetary or non- monetary value or any form of entertainment that would influence their actions and decisions in the process of administering national examinations.
- j. The supervisors and invigilators shall jointly:
  - i. ensure that furniture is available and that each candidate sits at a desk that is at a distance of 1.4m from another desk;
  - ii. ensure that candidates from feeder schools (internal, external and ODL) have been introduced to them and that they have MANEB identity cards;
  - iii. ensure that they receive all the necessary documents (for internal, external and ODL candidates from feeder schools e.g. nominal rolls and candidate code of conduct);
  - iv. arrange attendance registers according to the examination timetable;
  - v. practice sitting arrangements with candidates. In the cluster seating plan candidates from the same school shall not sit next to each other;
  - vi. read regulations to candidates on conduct of examinations;
  - vii. make sure that the candidates have signed their names on the candidate declaration form;
  - viii. ensure availability of facilities for storage of examination materials at the cluster centre/lone centre; and
  - ix. make sure that each candidate signs on the attendance register for each subject he/she writes.
- k. There shall be **one** invigilator for every **100** candidates or less where candidates are writing examinations in a hall and one invigilator for each examination room where there are several examination rooms.
- l. No candidate shall be allowed into an examination room **30 minutes** after the start of the examinations.
- m. Examination papers and other stationery that may be required during any examination session shall be delivered at the examination centre by officers assigned by MANEB.

**2.10 Medical fitness of candidates**

- a. A candidate who falls sick while writing an examination paper shall be allowed to continue writing if he/she shall be able to do so.
- b. A supervisor/invigilator shall compile a report on the incident of sickness of the candidate and shall submit the report to MANEB.
- c. A sick candidate shall be required to submit a medical report to MANEB through the supervisor/invigilator.
- d. No sick candidate shall be allowed to write examinations in the hostels, clinics or hospitals.

**2.11 Administration of examinations to candidates with special educational needs (SEN)**

- a. Candidates with Special Educational Needs shall be registered just like any other candidate. Thereafter, schools shall be required to inform MANEB, in writing through the DEMs, the presence of the candidates with Special Educational Needs at their centres.
- b. Depending on the nature and severity of the disability, candidates with Special Educational Needs shall be exempted from part(s) of an examination which they cannot perform.
- c. Schools shall be required to submit a written request for an exemption from a component/part of an examination to MANEB. Authorization for an exemption will only be given when there are substantial grounds for the request.
- d. Some candidates with severe cases of disabilities (who cannot hold pen and paper and write on their own) shall be examined orally.
- e. MANEB shall ensure that all candidates requiring oral examination arrangements are assessed for their needs.
- f. Braille and Large Print question papers shall be provided for candidates with total visual impairment and candidates with low vision, respectively.
- g. The attendance registers for a Special Educational Needs (SEN) candidate who is exempted from a component part of an examination shall be marked SEN since the candidate is not absent but exempted.
- h. All candidates with Special Educational Needs shall sign the subject attendance register. Where a candidate is unable to sign, a thumb print shall be used or the candidate's name shall be written.
- i. All candidates with low vision at a centre shall sit for examinations in the regular setting together with all other candidates while candidates with visual impairment and those with severe cases of disabilities shall sit for examinations in special rooms.
- j. All candidates with visual impairment and those with severe cases of disabilities shall sit for modified examination papers that accommodate their educational needs. These examinations shall include practical examinations.
- k. Specialist invigilators shall be allocated to candidates with visual impairment and those with severe cases of disabilities when they are in separate room(s).

**2.12 Administration of practical examinations**

Subjects with practical papers shall be administered to candidates upon centres satisfying the following:

- a. only centres or institutions approved by MANEB shall administer practical examinations
- b. candidates shall sit for practical examinations in the centres or institutions they registered for the examination
- c. examination centres or institutions shall provide to candidates materials and all requirements for the practical examinations

**2.13 Disqualification of candidates**

At the discretion of MANEB, any candidate shall be disqualified if he/she:

- a. introduces or tries to introduce material not authorized by MANEB into the examination
- b. communicates or tries to communicate in anyway with another person during the examination
- c. is wholly or partially responsible for other kind of misconduct or disruption in connection with the examination which might affect his/her own results or the results of other candidates

At the discretion of MANEB, a candidate shall be disqualified from the paper in which the offence was committed or from the whole examination.

**2.14 Release of examinations results**

- a. Examinations results shall be released upon approval by the Board.
- b. Examinations results shall be sent to examination centres through the DEMs.
- c. The Pass list shall be uploaded onto MANEB website.

**2.15 Examinations results queries**

- a. Schools shall be accorded an opportunity to submit examination results queries in writing to MANEB within **30 days** after the release of the results.
- b. The deadline for submission of queries shall be indicated in the Press Release on release of the examination results.
- c. MANEB shall not entertain any queries received after the stipulated deadline.

**2.16 Re-marking of examination scripts**

- a. Re-marking of scripts shall only apply to MSCE examination.
- b. Candidates that are not satisfied with their grades shall apply for re-marking within 30 days after release of examination results.
- c. MANEB shall remark an examination script, provided that:
  - i. the application is made in writing through a re-mark application form;
  - ii. the application is submitted within the time specified after the official publication of results; and
  - iii. the applicable fee is paid.
- d. The Board shall make the final decision on re-mark results.

**2.17 Candidates certification**

- a. A candidate shall be awarded an MSCE certificate if he/she either passes **six** subjects including English and **one** credit in any of those subjects or passes **five** subjects including English with at least **three** credits in those subjects.
- b. MSCE candidates shall collect their certificates from their respective examination centres.

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- c. Schools that close down shall surrender all candidates' uncollected MSCE certificates to MANEB office.
- d. Upon death, MSCE certificate for the deceased shall be returned to MANEB office.

**2.18 Issuance of notification of results slips**

- a. candidates shall receive a notification of results slip showing the grade achieved in every subject
- b. grades obtained in all subjects shall also be shown on the certificates awarded to all successful candidates
- c. grades shall be indicated on the notification of results slip and certificate as follows:
  - grades 1 to 2 denote a distinction
  - grades 3 to 6 denote a pass with credit
  - grades 7 to 8 denote a pass
  - grade 9 denotes a failure
- d. grades 1 to 6 are the equivalent standard of a GCE 'O'level pass
- e. a candidate who does not submit his or her Continuous Assessment score or coursework in any subject which requires him or her to do so shall not be graded in that subject

**2.19 Replacement of lost certificate**

- a. MANEB shall replace a lost certificate by producing a certifying statement
- b. The certifying statement shall be produced upon request at a fee to be determined by MANEB from time to time.
- c. The application for the certifying statement shall comprise:
  - i. Application letter from owner of certificate
  - ii. Police report
  - iii. Reference from a notable person eg local village head, pastor, sheikh, lawyer, applicants employer
  - iv. Reference letter from candidate's former school or from the DEM, if the school is no longer operational
  - v. National ID and/or MANEB ID
  - vi. Bank deposit slip or MANEB receipt

**2.20 Replacement of damaged certificate**

- a. MANEB shall replace a damaged certificate either by reprinting it or producing a certifying statement
- b. Reprinting of certificate or production of certifying statement shall be done upon request at a fee to be determined by MANEB from time to time.
- c. The application for the replacement shall comprise
  - i. Application letter from owner of certificate
  - ii. Police report
  - iii. A copy of the damaged certificate (where applicable)

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- iv. Reference letter from candidate's former school or from the DEM, if the school is no longer operational.
- v. National ID and/or MANEB ID
- vi. Bank deposit slip or MANEB receipt

**2.21 Issuance of a certificate by accumulation**

MANEB shall process a certificate by accumulation upon request from an individual candidate. The candidate shall be expected to satisfying the following:

- a. obtaining a minimum of **six** passes including English with **one** credit pass in **four** consecutive years of the same curriculum
- b. filling an application form indicating his or her academic record
- c. paying a processing fee that shall be determined by MANEB from time to time

**EXAMINATION SYLLABUSES FOR THE MALAWI SCHOOL CERTIFICATE OF  
EDUCATION EXAMINATIONS**

**3.0 MSCE ADDITIONAL MATHEMATICS EXAMINATION SYLLABUS**

**3.1 INTRODUCTION**

Additional Mathematics is an elective subject of which the examination is written at MSCE level only. The rationale for assessment in Additional Mathematics is to determine candidates' abilities to solve real life problems in the ever-changing world. It further helps check candidates' intellectual competence in logical problem solving, spatial visualization and abstract thinking, among others. Assessment also focuses on identifying candidates' levels of understanding of mathematical concepts or skills and their abilities to apply Additional Mathematics in areas such as Agriculture, Biology, Physics, Chemistry and Engineering.

**3.2 AIMS OF THE SYLLABUS**

The following are the aims of Additional Mathematics examination syllabus:

- a. To demonstrate understanding through the application of functions, graphs, Cartesian Geometry and inequalities.
- b. To demonstrate understanding of power series and use binomial theorem, geometric and arithmetic progression to solve real life problems.
- c. To demonstrate understanding of trigonometric relationships.
- d. To demonstrate understanding of the knowledge and skills of vectors, matrices and mechanics.
- e. To demonstrate understanding of limits, derivatives and anti-derivatives.
- f. To handle, analyse and interpret data and statistical information for decision making.

**3.3 ASSESSMENT OBJECTIVES**

**3.3.1 Core Element: Functions and Graphs**

**3.3.1.1 Topic: Functions**

In this topic candidates should be able to:

- a. Find the following:
  - images of polynomial, exponential, and logarithmic functions using given functions
  - minimum and maximum values of quadratic functions by completing the square
  - inverses of given functions.
- b. combine two functions to find composite functions in the form  $fg(x)$  or  $f \circ g(x)$  and  $f^2(x) = ff(x)$ .
- c. sketch graphs:
  - of quadratic equations and find turning points by completing the square
  - to show relationships between functions and their inverses
  - to solve real life problems involving functions.

### **3.3.1.2 Topic: Cartesian Geometry**

In this topic candidates should be able to:

- a. Find the following:
  - an equation of the circle
  - the equation of a tangent to a circle
  - the centre and radius of the circle from its' equation
- b. calculate distance from the centre of the circle to the tangent at the point of contact
- c. solve real life problems involving Cartesian Geometry

### **3.3.1.3 Topic: Graphs**

In this topic candidates should be able to:

- a. Determine the following:
  - linear laws from given functions in the form of  $y = kx^n$  or  $y = kn^x$  from given data by graphical method
  - laws of growth and decay using exponential equations
- b. solve exponential equations using graphs
- c. interpret graphs of exponential equations to make informed decisions

### **3.3.1.4 Topic: Inequalities**

In this topic candidates should be able to:

- a. Find the following:
  - critical points of inequalities by factorisation and completing the square
  - solutions of quadratic inequalities using graphs and tables
- b. Solve the following:
  - inequalities involving absolute values
  - real life problems involving inequalities.
- c. interpret quadratic inequalities of the form  $(x + a)(x + b) \leq 0$ ,  $\frac{a}{x+b} \leq cx + d$ ,  $\frac{ax+b}{cx+d} \leq 0$  using critical points. The sign  $\leq$  may be replaced by  $\geq$ ,  $<$  or  $>$
- d. sketch inequalities involving absolute values i. e  $|x - a| \leq b$

## **3.3.2 Core Element: Series**

### **3.3.2.1 Topic: Binomial Expansion**

In this topic candidates should be able to:

- a. construct Pascal's Triangle for expansion of binomial expressions of the form  $(x - y)^n$  for  $n \in \mathbb{N}^+$  (positive integer)
- b. compute binomial coefficients using factorials of the form  $nC_r$ , leading to 
$$\frac{n(n-1)(n-2)\dots(n-r+1)}{r!}$$
- c. expand expressions of the form  $(x + y)^n$  for  $0 < n \leq 6$

- d. evaluate decimal numbers up to 4 terms i.e.  $(0.8)^n = (1 - 0.2)^n$  using binomial theorem

### 3.3.2.2 Topic: Power Series

In this topic candidates should be able to:

- a. expand expressions in series form using sigma notation  
 b. apply properties of sigma notation of the form  $\sum k a_n = k \sum a_n$ ,
- $$\sum (a_n + b_n) = \sum a_n + \sum b_n, \quad \sum (a+b)^2 = \sum a^2 + 2 \sum ab + \sum b^2$$

- c. determine whether series are convergent or divergent

### 3.3.3 Core Element: Trigonometry

#### 3.3.3.1: Topic: Trigonometry

In this topic candidates should be able to:

- a. Calculate the following:  
   - six Trigonometric ratios in a unit circle  
   - trigonometric ratios of angles of any magnitude in degrees  
   - angles of any magnitude from given Trigonometric ratios  
   - arc lengths and areas of sectors using radian measure  
   - period, phase shift, wavelength and amplitude using sine and cosine functions  
 b. convert angles from degrees to radians and vice versa  
 c. Draw:  
   - graphs of sine, cosine and tangent for angles of any magnitude and use them to find angles of any trigonometric ratio  
   - transformations of trigonometric graphs of the form  $y = \sin(ax)$ ,  $y = A\sin x$ ,  $y = \cos(ax)$ ,  $y = A\cos x$  and  $y = B\cos(a + x)$   
 d. describe the nature of transformation of Trigonometric graphs (translation, rotation, reflection and enlargement)  
 e. simplify Trigonometric expressions using Trigonometric identities  $\sin^2 \theta + \cos^2 \theta = 1$ ,  $\tan \theta = \frac{\sin \theta}{\cos \theta}$ ,  $1 + \cot^2 \theta = \csc^2 \theta$ ,  $\tan^2 \theta + 1 = \sec^2 \theta$   
 f. simplify Trigonometric expressions using addition and double angle formulae  
 g. prove identical Trigonometric expressions  
 h. solve simple Trigonometric equations for angles  $0 \leq \theta \leq 360^\circ$   
 i. apply Trigonometry to calculate areas of different shapes

### 3.3.4 Core Element: Calculus

#### 3.3.4.1 Topic: Limits

In this topic candidates should be able to:

- a. calculate limits of the form  $f(x) = ax^n$  and  $f(x) = ax^n + b$

- b. use principles of limits to calculate limits of the forms  $f(x) \pm g(x)$ ,  $f(x)g(x)$ ,  $\frac{f(x)}{g(x)}$  and  $fg(x)$

### **3.3.4.2 Topic Differentiation**

In this topic candidates should be able to:

- a. Find the following:
  - derivatives of polynomials of degree less than 4 using first principles
  - the maximum or minimum of given situations
  - small increments of a function when a variable has marginal changes
  - small increments of a variable when a function has marginal changes
  - the equations of tangents to curves of the form  $y = f(x)$  when  $f(x) = ax^n$  and  $f(x) = x + \sin x$
  - the equations of normal to curves of the form  $y = f(x)$
- b. differentiate the following:
  - polynomials using power rule i.e when  $f(x) = x^n$ , then  $f'(x) = nx^{n-1}$  and Trigonometric functions of the form  $f(x) = A\sin x + a$
  - products, quotients and functions of functions
- c. determine the nature of turning points by:
  - using  $\frac{dy}{dx} = 0$  and find corresponding x and y values at the turning points
  - finding the signs of gradient to the immediate left and right of the turning point
  - using the second derivative
- d. Calculate rates of change for the following:
  - given functions
  - real life problems
- e. evaluate rates of change of two related variables when one variable has marginal changes

### **3.3.4.3 Topic: Integration**

In this topic candidates should be able to:

- a. Integrate:
  - polynomials of the form  $\int kf(x)dx = k \int f(x)dx$ ;  $\int (f(x) \pm g(x))dx = \int f(x)dx \pm \int g(x)dx$
  - composite function by reversing the method of chain rule (substitution method)
  - functions in the form of  $\sin(ax + b)$  and  $\cos(ax + b)$
- b. find the area of plane region bounded by functions using integration
- c. solve real life problems involving integration

### **3.3.5 Core Element: Mechanics**

#### **3.3.5.1 Topic: Vectors**

In this topic candidates should be able to:

- a. add and subtract vectors in 2 or 3 dimension
- b. Calculate the following:
  - the scalar product of two vectors in 2 or 3 dimension

- modulus of a vector
- unit vector
- the angle between two vectors in 2 or 3 dimension
- c. solve simple geometric problems using vectors
- d. Find the following:
  - the position vector of the mid-point of a line segment
  - the equation of the line in the form of  $\mathbf{r} = \mathbf{a} + t\mathbf{b}$
- e. combine and resolving vectors

### **3.3.5.2 Topic: Matrices**

In this topic candidates must be able to:

- a. calculate the determinant of a  $2 \times 2$  non-singular matrices
- b. find inverses of  $2 \times 2$  non-singular matrices
- c. solve simultaneous equations of two unknowns

### **3.3.5.3 Topic: Mechanics**

In this topic candidates should be able to:

- a. combine a number of forces
- b. find force in vector notation
- c. Calculate the following:
  - impulse and momentum
  - the horizontal range of a projectile
- d. solve problems involving the following:
  - uniformly accelerated motion
  - Newton's laws of motion
- e. resolve forces:
  - in equilibrium
  - on an inclined plane
  - vertical and horizontal components
- f. find the following:
  - coordinates of a projectile at a given time
  - the greatest height of a projectile
  - the time of flight of a projectile
  - the angle of projection from a point at which an object is released

## **3.3.6 Core Element: Statistics and Probability**

### **3.3.6.1 Topic: Statistics**

In this topic candidates should be able to:

- a. describe the following:
  - methods of collecting data
  - sampling methods
- b. represent data by cumulative frequencies
- c. calculate measures of spread/dispersion-range, variance, standard deviation for grouped and ungrouped data

- d. find frequencies for grouped and ungrouped data
- e. estimate medians, quartiles and percentiles from cumulative frequency graphs
- f. interpret data and statistical information by comparing sets of data using measures of central tendency and spread/Dispersion, tables and graphical means

### **3.3.6.2 Topic: Probability**

In this topic candidates should be able to:

- a. calculate:
  - probability using the law  $P(A) = 1 - P(A')$
  - The probability for non-exclusive events using the law

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

- conditional probability
  - dependent events:  $P(A|B) = P(A \cap B) / P(B)$
  - independent events:  $P(A \cap B) = P(A) P(B)$
- b. calculate probabilities using binomial distributions
- c. relate probability to real life situations

## **3.4 ASSESSMENT FORMAT**

The MSCE Additional Mathematics papers shall meet the following:

### **3.4.1 Paper I**

- a. There are ten free response questions in the paper.
- b. Time allowed for this paper shall be 2 hours 30 minutes.
- c. The paper shall have two sections {A and B}.
- d. Section A shall have seven compulsory questions worthy 60 marks,
- e. Section B shall have 3 questions with 20 marks each question.
- f. Candidates shall be required to answer any two questions of 20 marks each making a total of 40 marks.
- g. Each question in section B shall have two parts; a and b.
- h. Questions in the paper may have split/sub questions e.g. 7 a, 7 b, etc.
- i. Standard scientific calculators shall be used in the paper.
- j. Candidates shall use the spaces provided on the question paper to write answers.
- k. Questions in the paper are from the following topics:

<b>Core element</b>	<b>Topic /theme</b>
Functions and graphs	<ul style="list-style-type: none"> <li>- Functions</li> <li>- graphs</li> <li>- inequalities</li> </ul>
Series	<ul style="list-style-type: none"> <li>- Binomial expansion</li> </ul>
Trigonometry	<ul style="list-style-type: none"> <li>- Trigonometry</li> </ul>
Calculus	<ul style="list-style-type: none"> <li>- Limits</li> <li>- Differentiation</li> <li>- Integration</li> </ul>

### 3.4.2 Paper II

- a. There are **ten** free response questions in the paper.
- b. Time allowed for this paper shall be **2hours 30 minutes**.
- c. The paper shall have **two** sections {A and B}.
- d. Section A shall have **seven** compulsory questions worthy **60** marks,
- e. Section B shall have **3** questions with **20** marks each question.
- f. Candidates shall be required to answer any **two** questions of **20** marks each making a total of **40** marks.
- g. Each question in section B shall have two parts; **a** and **b**.
- h. Questions in the paper may have split/sub questions e.g. 7 a, 7 b, etc.
- i. Standard scientific calculators shall be used in the paper.
- j. Candidates shall use the spaces provided on the question paper to write answers.
- k. Questions in the paper are from the following topics:

Core element	Topic/theme
Functions and graphs	- Cartesian Geometry
Series	- Power series
Mechanics	- Vectors - Matrices - Mechanics
Handling and analysing data	- Statistics - probability

### 3.5 PERFORMANCE GRADE DESCRIPTORS

Candidates at MSCE shall demonstrate the skills and competences shown in table below at Pass, Credit and Distinction grade categories.

PASS	CREDIT	DISTINCTION
<p>Candidates should be able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. Isolating letters in basic equations</li> <li>2. Converting units from one form to another</li> <li>3. Simplifying expressions</li> <li>4. Evaluating expressions</li> <li>5. Carrying out substitution</li> <li>6. Sketching graphs</li> </ol> <p>Partially</p>	<p>Candidates should show all skills under <b>pass</b> and in addition, the following skills should be observed:</p> <ol style="list-style-type: none"> <li>1. Isolating letters in powers and in roots in equations</li> <li>2. Drawing graphs and inequalities</li> <li>3. Applying mathematical formulae</li> <li>4. Illustrating mathematical information</li> <li>5. Combining (resolving) of information to give useful mathematical</li> </ol>	<p>Candidates should show all skills under <b>credit</b> and in addition, the following skills should be observed:</p> <ol style="list-style-type: none"> <li>1. Interpreting diagrams, tables, graphs and information</li> <li>2. Visualising information</li> <li>3. Solving problems relating to real life situation</li> <li>4. Analysing mathematical information</li> <li>5. Transferring information to novel situations (different context)</li> <li>6. Classifying piece of</li> </ol>

	equation or expressions 6. Solving equations 7. Predicting events 8. Formulating equations or expressions from given information 9. Describing mathematical concepts	mathematical information 7. Bringing conclusion in statistical information based on inferences 8. Predicting trends 9. Estimating statistical information
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### **3.6 REFERENCES**

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## **4.0 MSCE AGRICULTURE EXAMINATION SYLLABUS**

### **4.1 INTRODUCTION**

Agriculture in secondary schools equips students with prerequisite knowledge and skills to apply scientific, analytical, research, technological, entrepreneurial, critical thinking, vocational and managerial skills in a creative and innovative way. This helps the students to identify problems and develop their appropriate solutions for personal and national development. It also enables secondary school graduates to apply the knowledge, skills and attitudes for environmental conservation, sustainable crop and animal production, farm business management, value addition and efficient marketing of products to maximize profits.

Therefore, the agriculture MSCE examination syllabus takes into account the national needs and the future employment and careers of the candidates as stipulated in the national curriculum. It also enables candidates to appreciate the many factors in the environment by helping them to develop an active interest in making the best use of the agricultural potential of this environment.

### **4.2 AIMS OF THE SYLLABUS**

The syllabus aims at enabling candidates to:

- a. demonstrate an understanding of the environmental and climatic factors which influence agricultural production, how to modify them to reduce risks in order to maximize yield and conserve them for sustainability.
- b. use research skills and improved agricultural technologies to increase farm productivity.
- c. apply the concepts and principles of agricultural economics and farm business management to increase profitability of agricultural enterprises.
- d. demonstrate an understanding of scientific knowledge and skills of growing crops and rearing farm animals profitably using recommended husbandry practices.
- e. Make candidates aware of the opportunities in agriculture and facilities available for advice to help them to succeed in any future occupation.

### **4.3 ASSESSMENT OBJECTIVES**

#### **4.3.1 Core element: Agriculture and environment**

##### **4.3.1.1 Topic: Physical properties of soil**

In this topic candidates should be able to:

- a. list the physical properties of soil
- b. state types of soil structure
- c. describe the following:
  - types of soil structure
  - physical properties of soil
  - methods of maintaining and improving soil structure
  - experiments on how to determine physical properties of soil

- d. explain the following:
  - ways in which soil structure can be destroyed
  - effects of physical properties of soil on crop production
- e. carry out experiments on different types of soils to determine their physical properties

#### **4.3.1.2 Topic: Chemical properties of soil**

In this topic candidates should be able to:

- a. list chemical properties of soil
- b. describe the following:
  - chemical properties of soil
  - ways of modifying soil pH
  - experiments on how to determine soil pH
- c. explain the following:
  - factors that affect soil pH
  - factors that affect nutrient status of the soil
  - effects of chemical properties of soil on crop production
- d. conduct experiments on soil pH

#### **4.3.1.3 Topic: Soil degradation**

In this topic candidates should be able to:

- a. define the term 'soil degradation'
- b. state forms of soil degradation
- c. list factors that cause soil degradation
- d. describe the following:
  - forms and causes of soil degradation
  - how to control soil degradation
- e. explain the following:
  - effects of soil degradation on crop production
  - relationship between rapid population growth and soil degradation

#### **4.3.1.4 Topic: Agriculture and climate change**

In this topic candidates should be able to:

- a. list ways of dealing with climate change in agriculture
- b. describe ways of dealing with climate change in agriculture

#### **4.3.1.5 Topic: Land drainage**

In this topic candidates should be able to:

- a. state the meaning of the term 'land drainage'
- b. explain the importance of land drainage
- c. describe methods of land drainage

**4.3.2 Core element: Agriculture Research and Technology.**

**4.3.2.1 Topic: Agricultural Development Agencies and their Services.**

In this topic candidates should be able to:

- a. list agricultural development agencies and their services in Malawi
- b. describe the services offered by agricultural development agencies in Malawi.
- c. relate the importance of agricultural development agencies on a growing population

**4.3.2.2 Topic: Farm mechanization**

In this topic candidates should be able to:

- a. define the meaning of the term '*farm mechanization*'
- b. list types of farm machinery
- c. state the following:
  - advantages of farm mechanization
  - limitations of farm mechanization
- d. explain the following:
  - factors to consider when mechanizing a farm
  - importance of observing safety measures when using farm machinery
- e. describe the following:
  - maintenance of various farm machinery
  - safety measures when using farm machinery
- f. draw and label parts of farm machinery

**4.3.2.3 Topic: Farm power**

In this topic candidates should be able to:

- a. list sources of farm power.
- b. describe sources of farm power
- c. explain the advantages and limitations of farm power
- d. explain ways of improving output from the different sources of farm power

**4.3.2.4 Topic: Gender and agricultural Technologies**

In this topic candidates should be able to:

- a. state the following concepts in agricultural technology: gender biases; causes of gender biases; effects gender biases and ways of dealing with gender biases
- b. explain causes and effects of gender biases in agricultural technology
- c. describe ways of dealing with gender bias in agricultural technology

**4.3.2.5 Topic: Improved farming technologies**

In this topic candidates should be able to:

- a. define the term "improved farming technology"
- b. state examples of improved farming technologies
- c. explain how improved farming technologies increase food supply
- d. explain how improved farming technologies affect food security

**4.3.3 Core element: Agricultural Economics and Farm Business Management**

**4.3.3.1 Topic: Farm records**

In this topic candidates should be able to:

- a. list types of farm records
- b. state the reasons for keeping farm records
- c. describe types of farm records
- d. prepare farm records from given data

**4.3.3.2 Topic: Farm budgeting**

In this topic candidates should be able to:

- a. define the term ‘farm budgeting’
- b. state types of farm budgets
- c. describe how to budget for an agricultural enterprise
- d. prepare farm budgets from given data

**4.3.3.3 Topic: Farm business decision-making**

In this topic candidates should be able to:

- a. state economic principles in farm business decision-making
- b. explain how each of the economic principles help in decision-making for farm business
- c. draw a graph to illustrate the law of diminishing marginal returns
- d. interpret the graph as a farm business management tool

**4.3.3.4 Topic: Agricultural enterprise combination**

In this topic candidates should be able to:

- a. state types of agricultural enterprise combination
- b. list factors to be considered when selecting agricultural enterprise combination
- c. describe the factors to be considered when selecting agricultural enterprise combination
- d. describe the types of agricultural enterprise combination with examples

**4.3.3.5 Topic: Agricultural cooperatives**

In this topic candidates should be able to:

- a. list examples of agricultural cooperatives
- b. state principles of agricultural cooperatives
- c. explain the following:
  - importance of agricultural cooperatives
  - challenges of running agricultural cooperatives
  - solutions to challenges of running agricultural cooperatives

**4.3.3.6 Topic: Agricultural marketing and trading**

In this topic candidates should be able to:

- a. define the following terms: 'agricultural marketing', 'agricultural trading', 'agricultural marketing cost' and 'agricultural marketing margin'
- b. list agricultural marketing channels and agencies in Malawi
- c. outline ways of improving trading of agricultural commodities at different levels
- d. explain the roles of channels and agencies in marketing agricultural commodities
- e. explain the importance of trading agricultural commodities
- f. describe the effects of population distribution on agricultural marketing
- g. calculate agricultural marketing costs and marketing margins

**4.3.3.7 Topic: Price elasticity of demand and supply**

In this topic candidates should be able to:

- a. define the terms 'price elasticity of demand' and 'price elasticity of supply' of agricultural commodities
- b. describe price elasticity of demand and supply of agricultural commodities
- c. explain the implications of price elasticity of demand and supply of agricultural commodities
- d. calculate price elasticity of demand and supply of agricultural commodities
- e. plot graphs showing different price elasticity of demand and supply of agricultural commodities

**4.3.4 Core-element: Crop production**

**4.3.4.1 Topic: Vegetative planting materials**

In this topic candidates should be able to:

- a. list vegetative planting materials
- b. explain the advantages and disadvantages of vegetative planting materials
- c. draw vegetative planting materials and label parts
- d. classify vegetative planting materials

**4.3.4.2 Topic: Cropping systems**

In this topic candidates should be able to:

- a. define the term 'cropping systems'
- b. list the different cropping systems
- c. explain the advantages and disadvantages of the different cropping systems
- d. explain the cropping systems which can promote crop yields
- e. analyse activities in the different cropping systems
- f. design different cropping systems e.g. crop rotation

**4.3.4.3 Topic: Mushroom production**

In this topic candidates should be able to:

- a. list cultivated species of mushrooms
- b. explain the importance of mushrooms
- c. explain husbandry practices for mushroom production

**4.3.4.4 Topic: Crop improvement**

In this topic candidates should be able to:

- a. define the term 'crop improvement'
- b. list activities in crop improvement
- c. describe the elements and methods of crop improvement

**4.3.4.5 Topic: Crop processing**

In this topic candidates should be able to:

- a. state the importance of crop processing
- b. describe the processing of various crops

**4.3.4.6 Pasture production and utilisation**

In this topic candidates should be able to:

- a. define terms used in pasture production
- b. list types of pastures
- c. describe the following:
  - methods of pasture establishment and factors that affect seed rate in pasture production
  - how to treat pasture seeds and proper time for pasture establishment
  - grazing systems in pasture management
  - factors that affect the quality of conserved pasture
- d. explain the following:
  - advantages and disadvantages of each method of pasture establishment
  - importance of pasture and methods of treating pasture seeds
  - activities involved in pasture management and methods of pasture conservation

**4.3.4.7 Topic: Mango production**

In this topic candidates should be able to:

- a. state the importance of fruits and list varieties of mangoes grown in Malawi
- b. describe the following:
  - characteristics of different mango varieties
  - factors to consider when selecting a suitable site for mango production
  - husbandry practices for mango production

#### **4.3.5 Core element: Livestock Production**

##### **4.3.5.1 Topic: Livestock feeds and feeding**

In this topic candidates should be able to:

- a. state classes and examples of livestock feeds
- b. list nutrients and sources of livestock feeds
- c. explain the importance of feeding livestock
- d. explain functions of nutrients in livestock feeds and factors to consider when feeding livestock
- e. classify livestock feeds

##### **4.3.5.2 Topic : Sheep and Goat production**

In this topic candidates should be able to:

- a. list the following in sheep and goat production:
  - breeds
  - diseases
  - parasites
  - materials for constructing an appropriate house
- b. state the following in sheep and goat production: feeding behavior, suitable feeds and characteristics suitable for a good house
- c. explain the feeding behavior of sheep and goats
- d. describe the following:
  - signs and symptoms of parasite attack and diseases for sheep and goats and how to control them
  - qualities of an appropriate breed of sheep and goats for breeding
  - the procedure for constructing an appropriate house for sheep and goats
- e. classify breeds of sheep and goats according to their use e.g. milk, meat and wool

##### **4.3.5.3 Topic: Cattle production**

In this topic candidates should be able to:

- a. list the following in cattle production: breeds; diseases; parasites; materials required when constructing an appropriate house; suitable feeds and management practices of each breed
- b. state characteristics of cattle breeds and their suitable houses
- c. describe the following in cattle production: management practices, suitable house and characteristics of each breed
- d. describe signs and symptoms of diseases and parasite attack for cattle and how to control them
- e. describe the procedure for constructing an appropriate house for cattle

#### 4.3.5.4 Topic: Reproductive systems of poultry and cattle

In this topic candidates should be able to:

- a. define terms used in this topic
- b. list parts of the reproductive systems of cattle and poultry
- c. state the signs of heat in cattle, sheep, goats and pigs, their processes of reproduction and the gestation period for cow, ewe, sow, and nanny
- d. explain the functions of different parts of the reproductive systems of cattle and poultry
- e. describe the oestrous cycle and processes of reproduction in cattle
- f. draw reproductive systems of cattle and poultry

#### 4.3.5.5 Topic: livestock Improvement

In this topic candidates should be able to:

- a. define the term '*livestock improvement*'
- b. state the following: aims and methods of livestock improvement, characteristics of livestock to be selected for breeding and breeding systems
- c. describe breeding systems and methods of livestock improvement

### 4.4 ASSESSMENT FORMAT

#### 4.4.1 Paper I (Theory paper)

- a. Time allowed for this paper shall be **2 hours**.
- b. The paper shall comprise **thirteen** compulsory structured questions which shall be answered on the same question paper in the spaces provided.
- c. The paper shall comprise **two sections A and B**.
- d. Section **A** shall comprise **10** short answer questions while section **B** shall comprise **3** essay questions.
- e. The paper shall have a total of **100** marks; **70** marks from section **A** and **30** marks from section **B**.
- f. Questions in the paper may have split/sub questions e.g. 7 a, 7 b, etc.
- g. Basic or standard scientific calculators shall be used in the paper.
- h. Candidates shall use the spaces provided on the question paper to write answers.

#### 4.4.2 Paper II (Practical paper)

- a. Time allowed for this paper shall be **1 hour 30 minutes**.
- b. The paper shall have **four** compulsory questions which shall be answered on the same question paper in the spaces provided.
- c. The paper shall have **two** sections, **A and B**.
- d. Section **A** shall have **two** descriptive questions each carrying **10** marks while section **B** shall have **two** questions that require candidates to carry out experiments each carrying **10** marks.
- e. The paper shall have a total of **40** marks, **20** marks from each section.
- f. Basic or standard scientific calculators shall be used in the paper.

## **4.5 PERFORMANCE GRADE DESCRIPTORS**

### **4.5.1 Paper I**

The paper contains questions covering a wide range of difficulty and the following table shows performance descriptors at different levels of performance.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates should be able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. Recalling previously learned information.</li> <li>2. Partial organizing facts.</li> <li>3. Labeling diagrams</li> <li>4. Partial doing mathematical calculations.</li> <li>5. Partial drawing and observing diagrams.</li> <li>6. Partial reasoning on given information.</li> <li>7. Partial drawing conclusion</li> <li>8. Partial analyzing given information.</li> </ol>	<p>Should show all skills under <b>pass</b> and in addition the following skills:</p> <ol style="list-style-type: none"> <li>1. Organizing facts.</li> <li>2. Analyzing given information</li> <li>3. Mathematical calculations.</li> <li>4. Drawing, labeling and observing diagrams</li> <li>5. Drawing conclusion</li> <li>6. Relating facts</li> <li>7. Partial illustrations using drawing</li> <li>8. Plotting and reading graphs</li> <li>9. Self expression</li> <li>10. Reasoning on given information</li> </ol>	<p>Should show all skills under <b>credit</b> and in addition the following skills:</p> <ol style="list-style-type: none"> <li>1. Exceptionally good in organizing facts.</li> <li>2. High ability in analyzing facts</li> <li>3. High ability in drawing and labeling diagrams</li> <li>4. High ability in illustrations using drawing</li> <li>5. High ability in reasoning</li> <li>6. High ability in self expression</li> <li>7. Exceptionally good in plotting and interpreting graphs</li> <li>8. High ability in mathematical calculations</li> <li>9. High ability in drawing conclusion</li> <li>10. Exceptionally good in relating facts</li> <li>14. Very good in describing experimental procedures</li> </ol>

### **4.5.2 Paper II**

The paper contains questions covering a wide range of difficulty and the following table shows performance descriptors at different levels of performance.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates should be able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. recalling previously learned information</li> <li>2. partial organizing facts</li> <li>3. drawing, observing</li> </ol>	<p>Should show all skills under <b>pass</b> and in addition the following skills:</p> <ol style="list-style-type: none"> <li>1. organizing facts</li> <li>2. analyzing given information</li> <li>3. mathematical calculations</li> <li>4. observing, drawing and</li> </ol>	<p>Should show all skills under <b>credit</b> and in addition the following skills:</p> <ol style="list-style-type: none"> <li>1. high ability in analyzing facts</li> <li>2. high ability in observing, drawing and labeling diagrams and specimen</li> <li>3. high ability in illustrations using drawing</li> </ol>

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and labeling diagrams and specimen 4. partial doing mathematical calculations 5. partial reasoning on given information 6. partial drawing conclusion 7. partial analyzing given information 8. partial ability in handling experiments	labeling diagrams and specimen 5. drawing conclusion on experiments 6. relating facts 7. partial illustrations using drawing 8. plotting and reading graphs 9. self expression 10. reasoning on given information 11. ability in handling experiments	4. high ability in reasoning 5. high ability in self expression 6. exceptionally good in reading, plotting and interpreting graphs 7. high ability in mathematical calculations 8. high ability in drawing conclusion 9. exceptionally good in relating facts 10. exceptionally good in organizing facts 11. high ability in handling experiments
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## **5.0 BIBLE KNOWLEDGE MSCE EXAMINATIONS SYLLABUS**

### **5.1 INTRODUCTION**

The Malawi School Certificate of Education Bible Knowledge examination syllabus is there to assist teachers and learners to prepare effectively for the national examinations. It is a tool which when used together with the teaching syllabus shall guide candidates on expectations of examiners as they approach the subject during national examinations. The syllabus sets out to assess students' biblical knowledge, skills and attitudes that shall enable them to be responsible and productive citizens in the contemporary world.

### **5.2 AIMS OF THE SYLLABUS**

The aims are to enable candidates to:

- a. demonstrate an understanding of the Bible as literature and its divisions
- b. demonstrate an understanding of the interaction of God and His people as recorded in the Old Testament Book of Isaiah.
- c. illustrate an understanding of how God worked in the New Testament through the birth, teachings, death, resurrection and the continuation of Jesus' ministry after His ascension
- d. explain the relationship between the Old and New Testaments, particularly in how Jesus Christ fulfilled the Old Testament concepts of Messiah, Lord and Servant
- e. demonstrate an understanding of biblical beliefs and practices
- f. demonstrate an understanding of Christian approaches to contemporary issues such as human rights and responsibilities, democracy, politics, gender, corruption, HIV and AIDS STIs, the environment, drug and substance abuse and vulnerable people

### **5.3 ASSESSMENT OBJECTIVES**

#### **5.3.1 Core Element: The Bible and its Divisions**

##### **5.3.1.1 Uses of the Bible**

In this topic, candidates should be able to:

- explain the Bible as the inspired word of God
- describe the uses of the Bible

#### **5.3.2 Core Element: God in the Old Testament**

##### **5.3.2.1 Prophet Isaiah**

###### **5.3.2.1.1 Proto-Isaiah**

The Call of Isaiah (6:1-13)

In this topic, candidates should be able to:

- define the term "prophet"
- state the roles of prophets
- narrate the call of Isaiah

- describe the reaction of Isaiah to his call
- state the significance of the touching of Isaiah's lips with a burning call

**Sin**

In this topic, candidates should be able to:

- describe the social, religious and political sins of Israel (1: 2-31)
- state what the LORD was going to take away from Jerusalem and Judah ( 3: 1-15)
- describe the consequences of people's sins (3: 1-15)
- describe the sins of the women of Jerusalem (3: 16- 4: 1)
- explain the punishment against the women of Jerusalem (3: 16- 4:1)
- define the term "parable" (5:1-7)
- narrate the parable of the vineyard (5: 1-7)

**New Jerusalem**

In this topic, candidates should be able to:

- state the reason why many nations shall stream to Mount Zion (2:1-4)
- describe how Jerusalem shall be restored
- explain how the land of Zebulon and Naphtali shall be disgraced (9:2-9)
- mention the titles of the future king of Israel (9:6)
- give the meaning of the word "branches" (11: 1)
- describe the qualities of the new King of Israel (11: 2-5)
- explain the characteristics of the peaceful kingdom of the new King

**Isaiah and Ahaz (7:1-25, 8:1-4, 8:16-22, 9:1)**

In this topic, candidates should be able to:

- name the kings of Syria and Israel
- narrate the message of the Lord to King Ahaz
- describe the reaction of Ahaz to the message
- explain the significance of the name 'Shear Jashub'
- state the meaning of the phrase " no more dangerous than the smoke from two smouldering sticks"
- give the meaning of the name "Immanuel"
- state the reason why Ahaz refused to ask for a sign
- describe the sign of Immanuel
- explain the four oracles given to King Ahaz (7: 18-25)
- state the roles of Uriah and Zechariah
- explain the importance of Isaiah's second child
- mention the tasks Isaiah' disciples in Isaiah 8: 16
- narrate the message of Isaiah to his disciples (8: 17-20)

**Prophet Isaiah and King Hezekiah (36:1-22, 37:1-38, 38:1-10, 39:1-8)**

In this topic, candidates should be able to:

- state the main arguments of the Assyrian official in his message of threat to King Hezekiah
- give the reaction of Hezekiah's officials to the remarks by the Assyrian official
- explain the reaction of Hezekiah when he heard a report from his officials (37: 1-4)
- describe Hezekiah's reaction to the second message of the Assyrian official
- explain God's response to Hezekiah's prayer (37: 21-38)
- state the message of Prophet Isaiah to King Hezekiah (38:1-3)
- explain Hezekiah's reaction to the message from Prophet Isaiah
- narrate God's response to Hezekiah's prayer (38: 4 -6)
- describe how Hezekiah was healed from his illness
- name the King of Babylonia
- explain how Hezekiah welcomed the messengers from Babylonia
- narrate Isaiah's response to what he heard from King Hezekiah

**5.3.2.1.2 Deutero-Isaiah**

**Message of hope for the exiles (40:1-17)**

In this topic, candidates should be able to:

- state the message of comfort Isaiah is told to deliver to God's people in exile
- explain how the LORD would prepare the way for the returning exiled Jews
- describe how Israel's God is incomparable

**Cyrus as an Instrument of Salvation (41:1-20, 45:1-13)**

- name the person being referred to as the Conqueror from the East
- state the reaction of the nations to Cyrus' victories (41: 5-6)
- mention how the LORD prepared Cyrus to fulfil his task
- narrate how God shows that His choice of Cyrus is unquestionable (45: 9-13)

**God Condemns Idolatry (44:9-20, 45:20-25)**

In this topic, candidates should be able to:

- define the term "idol worship"
- explain why idol worship is ridiculous (44: 9-20)

**Judgement on Babylon (47:1-15)**

In this topic, candidates should be able to:

- state the reason why Babylon is personified as a virgin
- mention accusations being levelled against Babylon
- describe how Babylon would be punished for her sins

**The Servant Songs (42:1-7, 49:1-6, 50:4-9, 52:13-15, 53:1-12)**

In this topic, candidates should be able to:

- mention how the First Servant of the LORD was prepared
- describe the qualities of the First Servant of the LORD
- identify the tasks of the First Servant of the LORD
- state what the term “ Before I was born, the LORD chose me” means in the Second Servant Song
- mention how the Second Servant of the LORD was prepared
- identify the tasks of the Second Servant of the LORD
- mention how the Third Servant of the LORD was prepared
- describe the qualities of the Third Servant of the LORD
- identify the tasks of the Third Servant of the LORD
- state the reasons why the people were shocked to see the Fourth Servant of the LORD
- describe how the Fourth Servant of the LORD suffered
- narrate how God glorified the Fourth Servant despite his suffering (53: 10-12)

**God’s Invitation (55:1-9)**

In this topic, candidates should be able to:

- give two groups of people being invited (55: 1-9)
- narrate God’s invitation (55: 1-9)

**5.3.2.1.3 Trito-Isaiah**

**Universal Salvation (56:1-8)**

In this topic, candidates should be able to:

- state the reasons why foreigners and castrated Jews could not be accepted as God’s people (56: 1-8)
- describe what the LORD says on how foreigners and castrated Jews could be saved

**Bad Leadership (56:9-12, 57:1-13)**

In this topic, candidates should be able to:

- explain why the leaders are condemned
- describe the idol worship practices that the Jews were accused of (57: 1-10)
- explain the punishment pronounced by God to the idol worshippers

**People’s Complaint and God’s Answer (59:1-4)**

In this topic, candidates should be able to Mention the sins the Jews are accused of committing

**The Good News of Deliverance (61:1-11)**

In this topic, candidates should be able to:

- state how the LORD prepared the speaker
- describe the mission of the speaker
- explain the future glory of the people of Judah

### **5.3.3 THE GOSPEL ACCORDING TO THE BOOK OF LUKE**

#### **5.3.3.1 Core element: The life of Jesus Christ**

##### **5.3.3.1.1 Infancy narratives**

###### **Birth of John the Baptist (1:1-80) and the Birth of Jesus Christ (2:1-52)**

In this topic, candidates should be able to:

- name the priestly order to which Zechariah belonged
- mention the task Zechariah was performing when the angel Gabriel appeared to him in the Temple
- narrate the message of the angel Gabriel to Zechariah
- describe the reaction of Zechariah to the message of the angel
- state the reason why Zechariah was unable to speak after his encounter with the angel
- narrate the message of the angel Gabriel to Mary about the birth of Jesus (1: 29-33)
- describe the reaction of Mary to the message of the angel
- narrate Mary's song of praise (1: 46-56)
- state the reason why the child born to Elizabeth was given the name 'John'
- narrate the prophecy of Zechariah after John's birth
- mention the reason why Joseph and his wife had to travel to Bethlehem to register
- narrate the message of the angel of the Lord to the shepherds (2: 9-12)
- describe the reaction of the shepherds to the angel's message
- describe the Jewish birth rituals

##### **5.3.3.1.2 The Ministry of Jesus**

###### **Preaching of John the Baptist (3:1-20)**

In this topic, candidates should be able to:

- narrate the message of John the Baptist
- explain the reaction of various groups to the message of John the Baptist

###### **The Baptism and Temptations of Jesus Christ (3:21-22, 4:1-13)**

In this topic, candidates should be able to:

- describe the Baptism of Jesus Christ
- narrate the temptations of Jesus Christ
- explain the significance of each of the temptations of Jesus Christ

###### **Healings and Exorcism (4:31-37, 4:38-41, 5:12-16, 5:17-26, 7:1-10, 8:26-39, 8:43-48, 9:37-43, 17:11-19, 18:35-43)**

In this topic, candidates should be able to:

- describe how Jesus healed Simon's mother in-law
- narrate how Jesus healed a man suffering from a dreaded skin disease

- state the reason why Jesus ordered the man healed from the dreaded skin disease to go to the priest
- narrate how Jesus healed the paralysed man
- state the reason why Jesus forgave the sins of the man
- describe the reaction of teachers of the Law and Pharisees
- explain why the Jewish elders said the Roman officer deserved Jesus' help
- describe how the Roman officer demonstrated his faith when Jesus approached his house
- state the reason why Jairus begged Jesus to go with him to his house (8: 42)
- narrate how the woman suffering from severe bleeding was healed
- describe how Jesus raised Jairus' daughter from the dead
- mention the similarities between the miracles performed by Jesus in this passage
- state the reaction of one man suffering from a dreaded skin disease after his healing
- explain the reaction of the people when the blind beggar cried out to Jesus to take pity on him (18:35-43)
- narrate how Jesus healed the blind beggar in this passage
- state the reaction of the man with an evil spirit when he saw Jesus in the synagogue at Capernaum (4: 31-37)
- describe the reaction of the man with demons when he saw Jesus at Gerasa
- state the meaning of 'Mob'
- outline the reaction of the people to the healing of the man
- narrate how Jesus healed a boy with an evil spirit (9: 37-43)

**Miracles (8:22-25, 9:10-17, 7:11-17, 8:40-42, 8:49-56)**

Candidates are able to demonstrate the following abilities:

- state the reaction of Jesus' apostles when a strong wind blew on the lake
- narrate how Jesus calmed the storm
- name the place where Jesus fed the great crowd
- describe Jesus' response when His disciples decided to send the crowd away to find their own food
- narrate how Jesus fed the crowd
- name the place where Jesus raised a widow's son (7: 11-17)
- state the reason why Jesus performed this miracle
- describe how the son was raised from the dead

**The Good Samaritan (10:25-37)**

Candidates are able to demonstrate the following abilities:

- narrate the parable of the Good Samaritan
- state the reason why the teacher of the Law asked Jesus, 'what must I do to receive eternal life (10: 25)
- state what the man in the crowd asked Jesus to do (12: 13)
- describe Jesus' response to the man

**The Parable of the Rich Fool (12:13-21)**

Candidates are able to demonstrate an ability to relate the parable of the rich fool

**Parables of the Lost (15:1-32)**

Candidates are able to demonstrate the following abilities:

- narrate the parable of the lost sheep
- describe the parable of the lost coin
- state what the younger son in the parable of lost son asked his father to do
- explain what happened for the younger son to decide to return to his home
- describe the reaction of the elder son when his brother returned home

**Mission of the Twelve (5:1-11, 5:27-32, 6:12-16, 9:1-6)**

Candidates are able to demonstrate the following abilities:

- explain the reaction of Peter to the miraculous catch of fish
- state what Jesus told Peter after he caught a large number of fish
- mention Levi's occupation
- relate the reaction of Levi when he was called by Jesus
- name the twelve apostles chosen by Jesus
- mention the instructions Jesus gave His disciples before He sent them out (9: 1-6)

**Discipleship (9:57-62, 14:25-33)**

Candidates are able to demonstrate the following abilities:

- state the responses of Jesus to the three would-be followers
- describe what Jesus taught a large crowd on the cost of being a disciple

**Sabbath Teaching (6:1-11, 13:10-17, 14:1-6)**

Candidates are able to demonstrate the following abilities:

- describe the reaction of the Pharisees when they saw Jesus' disciples picking corn on the Sabbath (6: 1-5)
- narrate Jesus' response to the Pharisees' reaction
- relate how Jesus healed a woman with an evil spirit on the Sabbath (13: 10- 17)
- describe the reaction of the official of the synagogue to the healing of the woman
- explain Jesus' response to the reaction of the official
- describe what Jesus told the teachers of the Law and the Pharisees after healing a sick man on the Sabbath (14: 1-6)

**Paying Tax (19:1-10, 20:19-26)**

Candidates are able to demonstrate the following abilities:

- explain what Zacchaeus did when he wanted to see Jesus in Jericho
- describe the reaction of the crowd when Zacchaeus welcomed Jesus
- state what Zacchaeus promised to do
- describe Jesus' response to the question of paying tax posed by the teachers of the Law and the Chief priests (20: 19-26)

**Prayer (11:1-13, 18:1-8, 18:9-14)**

Candidates are able to demonstrate the following abilities:

- relate the prayer Jesus taught His disciples (11: 1-4)
- narrate the parable of a friend at midnight in (11: 1-11)
- describe the parable of the widow and the judge (18: 1-8)
- explain the differences between the prayer of the Pharisee and that of the tax collector in (18: 9-14)

**Fasting (5:33-39)**

Candidates are able to demonstrate the following abilities:

- state the accusation that was levelled against the disciples of Jesus
- describe Jesus' response to the accusation

**Forgiveness (7:36-50)**

Candidates are able to demonstrate the following abilities:

- explain what the sinful woman did to Jesus at the home of Simon the Pharisee (7: 36-50)
- describe the reaction of the Pharisee to what the woman did
- narrate the parable said by Jesus in response to the Pharisee's reaction

**Humility and Hospitality (14:7-24)**

Candidates are able to demonstrate the following abilities:

- explain the parable Jesus said about choosing sitting places when one is invited to a wedding feast (14: 7-11)
- state the advice Jesus gave His host about inviting people to a lunch or a dinner (14: 12-14)
- narrate the parable of the Great Feast (14: 15-24)

**Social Responsibility (16:19-31)**

Candidates are able to demonstrate an ability to explain what happened when both the Rich man and Lazarus died.

**Riches (18:18-30)**

Candidates are able to demonstrate the following abilities:

- describe Jesus' response when a Jewish leader asked what he had to do in order to receive eternal life (18: 18-20)
- state the reaction of the man when he was told to sell everything he had and give the money to the poor

**Authority (20:1-8)**

Candidates are able to demonstrate the following abilities:

- explain Jesus' response to the question about His authority
- describe the reaction of the Chief priests, teachers of the Law and the elders to Jesus' response

**Life After Death (20:27-40)**

Candidates are able to demonstrate an ability to narrate Jesus' response to the question posed by the Sadducees about rising from death (20: 27- 39).

**End Times (21:5-38)**

Candidates are able to demonstrate an ability to describe what Jesus taught about end of times.

**His Identity (9:28-36)**

Candidates are able to demonstrate the following abilities:

- name the three disciples that accompanied Jesus to the hill to pray
- describe what happened to Jesus when He prayed
- explain the reaction of Peter to what happened to Jesus
- state the voice that came from the crowd during the event

**Women In Service (8:1-3, 10:38-42)**

Candidates are able to demonstrate the following abilities:

- describe how Martha and Mary welcomed Jesus at their home
- explain Jesus' response to Martha's concerns over her sister

**5.3.3.2 The Passion of Jesus Christ**

**Respect For The Temple (19:45-48)**

Candidates are able to demonstrate the following abilities;

- explain the instructions Jesus gave to His disciples before entering Jerusalem
- describe Jesus' triumphant entry into Jerusalem
- explain the reaction of the Pharisees to Jesus' triumphant entry into Jerusalem
- state what Jesus did when He went into the Temple

**Death Predictions (9:21-22, 9:43-45, 18:31-34)**

Candidates are able to demonstrate an ability to describe what Jesus said about His death and resurrection.

**Betrayal (22:1-6)**

Candidates are able to demonstrate an ability to explain why Judas agreed to betray Jesus.

**The Lord's Supper (22:7-23)**

Candidates are able to demonstrate the following abilities:

- name the disciples who were sent by Jesus to prepare the Passover meal (22: 7-8)
- describe the instructions given by Jesus to the two disciples on how to identify the place for the Passover
- narrate how Jesus ate the Passover meal with His disciples
- state the prediction made by Jesus during the Passover meal

**Events on Mount Olives (22:39-46)**

Candidates are able to demonstrate an ability to narrate Jesus' prayer at Mount of Olives.

**The Arrest of Jesus Christ (22:47-53)**

Candidates are able to demonstrate the following abilities:

- relate the arrest of Jesus
- describe Peter's response to the people who said he was with Jesus (22: 54-62)

**Trials of Jesus Christ (22:63-71, 23:1-25)**

Candidates are able to demonstrate the following abilities:

- state the accusations made by the Jewish Council against Jesus (22: 66-71)
- explain Jesus' answers to the accusations levelled against Him
- state the accusations levelled against Jesus before Pilate (23: 1-5)
- state Jesus' response to the accusations
- describe what happened when Jesus was brought before King Herod
- explain what Pilate suggested to the crowd when he had found Jesus innocent
- describe the reaction of the crowd to Pilate's suggestion

**The Crucifixion (23:26-43)**

Candidates are able to demonstrate the following abilities:

- state what happened to Simon of Cyrene as Jesus was being led away by soldiers
- narrate the message of Jesus to the women who were weeping for Him
- explain the remarks made by each of the criminals who were crucified together with Jesus
- describe what happened when Jesus died
- explain what Joseph of Arimathea did when Jesus had died

**The Resurrection (24:1-49)**

Candidates are able to demonstrate the following abilities:

- relate the experiences of the women when they went to Jesus' tomb early on Sunday (24: 1-12)
- describe the reaction of the apostles when women reported to them about their experiences
- describe the circumstances that led to the recognition of Jesus by Cleopas and his friend (24: 28-32)
- explain the reaction of Jesus' disciples when He appeared to them after His resurrection

**The Ascension (24:50-53, Acts 1:6-11)**

Candidates are able to demonstrate the ability to

- state what Jesus promised His disciples before He ascended into heaven.

### **5.3.3.3 The Birth Of The Church**

#### The Birth And Life of The Church (Acts 1:1-26, 2:1-42)

Candidates are able to demonstrate the following abilities:

- relate Jesus' response when He was asked to bring back the Kingdom back to Israel in (1: 6-11)
- narrate Peter's speech in Jerusalem before the choice Judas' successor
- name two men who were proposed to succeed Judas
- state how Judas' successor was chosen
- identify relevant themes to the passage
- describe how the believers received the Holy Spirit on the day of Pentecost
- identify main points in Peter's defence on the accusation of being drunk (2: 14-42)
- identify relevant themes applicable to the passage

### **5.3.3.4 The Spread Of The Church**

#### The Spread of The Church (chapters 3-28)

Candidates are able to demonstrate the following abilities:

- narrate the healing of the lame man at the Beautiful Gate in (3: 1-10)
- describe the reaction of the lame man after he had been healed
- describe Peter's message in the Temple after the healing of the lame man
- identify relevant themes to the passage
- name the groups of the people who were annoyed by Peter's speech in the Temple in (4: 1-4)
- state the reason why Peter and John were jailed (4: 5)
- narrate Peter's speech before the Jewish Council (4: 8- 12)
- describe the reaction of members of the Council to Peter's speech
- identify themes relevant to the passage
- explain how the apostles were released from public jail (5: 17-21)
- describe Peter's response when the Jewish Council ordered the early Church not to teach in the name of Jesus (5: 29-32)
- state the Council's reaction to Peter's response
- narrate Gamaliel's advice to the Council when they wanted to kill the apostles
- mention themes relevant to the story
- explain the event that led to the choice of the seven helpers (6: 1-7)
- describe the qualities of the people chosen as helpers
- state the accusations levelled against Stephen by the members of the Synagogue of the Freedmen (6: 8-15)
- narrate the death of Stephen (7: 54-60)
- explain what happened when Philip preached the message of God in Samaria (8: 4-8)
- describe the reaction of the people in Samaria after the preaching of Philip
- state the reason why Peter and John were sent to Samaria from Jerusalem

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- explain the reaction of Simon when he had seen that people in Samaria had received the Holy Spirit
- describe how Philip helped the Ethiopian official to understand the passage of the scripture he was reading (8: 32-37)
- mention the themes applicable to the story
- state the reason why Saul was going to Damascus
- relate what happened to Saul near the city of Damascus
- describe the vision of Ananias in Damascus (9: 10-14)
- explain the reaction of the people when Saul preached in Damascus immediately after his conversion
- describe the reaction of the disciples in Jerusalem when Saul tried to join them
- narrate the healing of Aeneas in Lydda (9: 32- 35)
- narrate how Tabitha was raised from death in Joppa (9: 39-43)
- identify relevant themes to the stories
- narrate Cornelius' vision (10: 4-6)
- relate Peter's vision in Joppa (10 : 9-16)
- describe Cornelius' reaction when Peter arrived at his home
- state what happened to the Gentiles at the home of Cornelius
- identify relevant themes to these stories
- state what Peter was accused of when he reported to the apostles in Jerusalem about the events at Cornelius home' (11: 1-3)
- relate Peter's defence to the accusations
- state the prediction made by Agabus at Antioch (11: 27-30)
- narrate how Peter was released from prison (12: 6-19)
- describe the death of Herod (12: 20-25)
- explain what Saul said when Bar-Jesus opposed Barnabas and Paul at the home Sergus Paulus (13: 9-11)
- state the reaction of Sergus Paulus when Elymas became blind
- narrate the healing of the lame in Lystra (14: 8-10)
- describe the reaction of the crowd after the lame man was healed
- identify themes relevant to the story
- state the teaching brought at Antioch by some men from Judea (15:1)
- describe the reaction of Paul and Barnabas to the teaching
- narrate what Peter said at the meeting in Jerusalem
- state what James proposed at the meeting to be done about the Gentile believers (15:19-24)
- identify relevant themes to the story
- state the accusation levelled against Paul and Silas in Philippi (16:16-40)
- narrate the release of Paul and Silas from jail
- describe Paul's experience with Epicurian and Stoic teachers in Athens (17: 16
- explain why Paul claimed the people in Athens were religious
- relate Demetrius' speech to his fellow silversmiths at Ephesus (19: 21-27)
- describe the reaction of the crowd to Demetrius' speech

- explain how the town clerk calmed the crowd (19: 35-41)
- outline main points in Paul's farewell speech to the elders in Ephesus (20: 17-38)
- describe Agabus' prediction of Paul's arrest in Jerusalem (21: 10-11)
- state Paul's reaction when he was advised not to proceed to Jerusalem following Agabus' prediction
- describe James' advice to Paul when he arrived in Jerusalem
- state the accusations levelled against Paul in the Temple in Jerusalem
- explain how the Roman commander rescued Paul from those who had planned to kill him
- identify themes relevant to the story
- describe why the Pharisees and Sadducees quarrelled as Paul spoke to the Council (23: 6- 8)
- state the plan the Jews had against Paul (23:12- 15)
- explain how the Roman commander rescued Paul from some Jews who planned to kill him (23: 23- 35)
- describe the accusations levelled against Paul by Tertullus before Governor Felix at Caesarea (24:1-9)
- identify main points in Paul's defence before Felix
- explain how Festus tried to please the Jews who were accusing Paul (25: 9)
- state Paul's reaction to Festus' action
- describe the advice Governor Festus was seeking from King Agrippa about Paul's case in Acts 25: 13-27
- explain how Julius showed kindness to Paul on the ship to Rome (27: 3-4)
- state the advice Paul gave to the crew on the ship to Rome as they arrived at Safe Harbours
- describe how Paul encouraged the people on the way to Rome when a storm blew strongly (27: 21-26)
- state how one Roman officer saved Paul's life when some soldiers had wanted to kill all the prisoners (27: 42- 44)
- describe what happened Paul arrived at Malta (28: 1-10)
- narrate Paul's speech to the Jewish leaders when he arrived in Rome
- describe the reaction of the Jews to Paul's speech
- identify relevant themes to the stories

**Themes in Acts of Apostles**

Candidates are expected to state and apply the following themes appropriately to the stories in the Acts of the Apostles:

- God saves mankind through Jesus Christ.
- Jesus works through the Holy Spirit.
- Jesus uses the Church as an instrument of salvation.
- The power of the Holy Spirit is irresistible.
- The Holy Spirit guides the Church.
- The Church shares in the suffering of Jesus Christ.

- The importance of prayer in the life of the Church.
- Salvation is offered first to the Jews and then to the Gentiles.
- The author's sympathy for the Romans.

#### **5.3.4 Core element: The Relationship Between The Old And The New Testaments**

##### Jesus' fulfilment of the Old Testament

Candidates are able to demonstrate the following abilities:

- analyse the concepts of Messiah, Lord and Servant as used in the Old and New Testaments
- explain how Jesus Christ fulfils the concepts of Messiah, Lord and Servant

##### Worship

- explain the meaning of the term 'worship'
- describe worship as practised in the Old Testament
- describe worship as practised by the early Church
- identify common features of worship in the Old Testament and the early Christian community

#### **5.3.5 Core element: Biblical Beliefs And Practices**

##### Biblical beliefs

Candidates are able to demonstrate the following abilities:

- describe biblical beliefs
- explain the significance of biblical beliefs

##### Biblical practices

Candidates are able to demonstrate the following abilities:

- identify biblical symbols
- explain what the Bible teaches about marriage

#### **5.3.6 Core element: Christian approaches to contemporary issues**

##### Christianity and contemporary issues

Candidates are able to demonstrate the following abilities:

- define the term 'environmental degradation'
- explain the roles of Christians in conserving the environment
- analyse Christian teachings on the relationship between the Church and the state
- outline indicators of moral decay that lead to the spread of HIV and AIDS
- outline biblical teachings that help prevent the spread of HIV and AIDS

### **5.4 ASSESSMENT FORMAT**

#### **5.4.1 Paper I: Multiple Choice (1 hour)**

- a. The paper shall have fifty questions
- b. The total number of marks for the paper is 50

- c. The questions shall be derived from the Book of Isaiah, the Gospel according to Luke, Acts of the Apostles and contemporary issues.
- d. Candidates shall indicate their answers on OMR

**5.4.2 Paper II: Structured questions (2hours)**

- a. The total number of marks for the paper is 120
- b. The paper shall have three sections, **A, B and C**.
- c. The paper shall have six questions derived from the Book of Isaiah, the Gospel according to Luke, Acts of the Apostles and contemporary issues
- d. Each question carries a total of 20 marks
- e. Answers shall be written on the question paper

**5.5 PERFORMANCE GRADE DESCRIPTORS**

PASS	CREDIT	DISTINCTION
Candidates are able to demonstrate the following abilities:	Candidates show all skills under <b>pass</b> and in addition the following skills:  1. answer some recall questions 2. demonstrate partial knowledge of biblical concepts 3. narrate partially some biblical stories	Candidates show all skills under <b>credit</b> and in addition the following skills:  1. demonstrate understanding of biblical concepts 2. show considerable ability to narrate biblical stories 3. apply some themes to stories in Acts of the Apostles  1. demonstrate strong knowledge of biblical concepts, stories and themes 2. narrate biblical stories coherently and logically 3. link biblical concepts in the Old Testament and the New Testament 4. apply biblical concepts to contemporary issues

**5.6 REFERENCES**

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## **6.0 MSCE BIOLOGY EXAMINATION SYLLABUS**

### **6.1 INTRODUCTION**

The Biology MSCE Examination syllabus guides candidates to demonstrate positive attitudes towards the environment and interact with it in a responsible and sustainable manner in order to mitigate the impact of climate change. It also helps to assess scientific attitudes such as curiosity, creativity and inquiring mind.

### **6.2 AIMS OF THE SYLLABUS**

The syllabus aims at enabling candidates to:

1. To show understanding of the environment for its sustainability and to mitigate the impact of climate change.
2. To demonstrate knowledge and understanding of the diversity, structure and functions of plants and their role in the environment.
3. To show understanding of the diversity, forms and functions of animals.
4. To show knowledge and understanding of forms and functions of the human body and human diseases to promote health behaviour in communities.
5. To demonstrate understanding of genetics as a means of variations, survival, evolution and its use in biotechnology.

### **6.3 ASSESSMENT OBJECTIVES:**

#### **6.3.1 Core Element: Environment**

##### **6.3.1.1 Topic: Living Things and the Environment**

In this topic, candidates should be able to:

- a. define sampling methods
- b. list the following:
  - different sampling methods
  - processes in different nutrient cycles
  - sources of nutrients in the different nutrient cycles
  - components of the ecosystem
- c. calculate plant and animal population estimates using appropriate sampling methods.
- d. construct:
  - food chains and food webs
  - different types of food pyramid
- e. draw and label the components of the different nutrient cycles
- f. give an example of each component of the ecosystem
- g. explain:
  - advantages and disadvantages of different sampling methods
  - the processes involved in the nutrient cycles and how they are linked to each other
  - how energy flows in an ecosystem
  - adaptations of plants and animals to various environments

- how each component of an ecosystem affect diversity and distribution of organisms in an ecosystem

### **6.3.2 Core Element: Plant Biology**

#### **6.3.2.1 Topic: Plant Structure and Function.**

In this topic candidates should be able to:

- a. define the terms: diffusion, osmosis and active transport, transpiration
- e. state the following:
  - the tissues used in transport in plants
  - the importance of transpiration in plants
  - the factors that affect the rate of transpiration in plants
- b. explain the following:
  - adaptations of leaves for photosynthesis
  - how gaseous exchange occurs in leaves
  - the functions of parts of a plant cell
  - what happens during the light stage and dark stage of photosynthesis.
  - the fate of glucose after photosynthesis
- c. describe the following:
  - the process of photosynthesis.
  - structural and functional differences between xylem and phloem
  - the processes of diffusion, osmosis and active transport
  - how translocation occurs
  - how transpiration stream occurs in plants
  - an experiment on factors affecting the rate of transpiration
- d. explain the following:
  - the functions of mineral elements in plant growth and photosynthesis
  - how substances are transported in the xylem and phloem
  - the factors that affect the rate of diffusion
  - the importance of diffusion, osmosis and active transport
  - the importance of transpiration in plants
  - the importance of photosynthesis
  - the factors that affect the rate of transpiration
- f. carry out an investigation on:
  - types of pigments in leaves
  - osmosis in different plant tissues
- g. draw and label the cross-section of leaves, stem and roots using hand lens

#### **6.3.2.2 Topic: Plant Responses**

In this topic candidates should be able to:

- a. define the term tropism
- b. list down the types of tropism
- c. explain the following
  - the types of tropisms

- how tropism occurs
- d. describe the following:
  - experiments on different types of tropisms
  - how nastic responses occur in various plants

### **6.3.3 Core Element: Animal Biology**

#### **6.3.3.1 Topic: Vertebrates and Invertebrates**

In this topic candidates should be able to:

- a. list down the following:
  - main groups of animals
  - the main groups of invertebrates
  - groups of vertebrates
  - the internal features of selected vertebrates
  - locomotory structures in birds, fish and mammals.
- b. identify given animals using a dichotomous key
- c. dissect some selected vertebrates
- d. draw and label the following:
  - the internal structures of selected vertebrates
  - locomotory structures in birds, fish and mammals
- e. describe how locomotion occurs in birds, fish and mammals
- f. explain how fish, birds and mammals are adapted for locomotion

### **6.3.4 Core element: Human Biology**

#### **6.3.4.1 Topic: Human Digestive System**

In this topic candidates should be able to:

- a. define the terms enzyme, assimilation, deamination and transamination
- b. state the properties of enzymes
- c. list down the following:
  - the end products of digestion of carbohydrates, proteins and lipids
  - the functions of a liver in relation to digestion
  - abnormal conditions associated with the digestive system
- d. explain the following:
  - the properties of enzymes
  - the adaptations of small intestines for absorption
  - the functions of the large intestines/colon
- e. explain the following
  - what happens to food after digestion
  - the functions of a liver in relation to digestion
  - the abnormal conditions associated with the digestive system
  - the preventive measures and remedies of abnormal conditions associated with the digestive system

- f. describe the process of absorption of food substances
- g. draw and label parts of a villus
- h. conduct experiments on enzyme activity

#### **6.3.4.2 Topic: Human Circulatory System**

In this topic candidates should be able to:

- a. state the components of the lymphatic system
- b. list down the following:
  - functions of the circulatory system
  - the types of blood cells
  - the properties of haemoglobin in relation to oxygen transportation
  - abdominal conditions associated with the human circulatory system
- c. explain the following:
  - the functions of the circulatory system
  - the functional and structural differences among types of blood vessels
  - why large animals need a circulatory system
  - the structure and function of blood cells
  - the structural and functional differences between red and white blood cells
  - the role of haemoglobin in oxygen transportation
  - the effect of physical activity on pulse rate
  - the abnormal conditions associated with the human circulatory system
  - the ways of preventing problems associated with the circulatory system
  - the differences in composition of plasma, tissue fluid and lymphatic fluid
  - how lymph is formed
  - the importance of the lymphatic system
- d. describe the following:
  - the blood clotting process
  - how the heart works
  - an experiment on the effect of physical activity on pulse rate
- e. draw and label the structure of the heart

#### **6.3.4.3 Topic: Human Reproductive System**

In this topic candidates should be able to:

- a. state the following:
  - i. parts of the human reproductive system
  - ii. the importance of breastfeeding
- b. list down the following:
  - the hormones involved in the menstrual cycle
  - problems associated with reproduction
- c. explain the following:
  - i. the functions of the parts of the human reproductive system
  - ii. the role of hormones in the menstrual cycle
  - iii. the problems associated with reproduction

- iv. the role of placenta
- v. functions of placenta during pregnancy
- vi. adaptation of the placenta to perform its functions
- vii. differences between fertilization and conception
- viii. the advantages of exclusive breastfeeding over bottle feeding
- d. describe the following:
  - i. menstrual cycle
  - ii. the process of giving birth
  - iii. the contraceptive methods

#### **6.3.4.4 Topic: Human Respiratory System**

In this topic candidates should be able to:

- a. define the terms associated with lung capacity, tidal air, tidal volume and residual air, tissue respiration
- b. state the following:
  - types of tissue respiration
  - the differences between aerobic and anaerobic respiration
- c. write down the chemical equations for aerobic and anaerobic respiration
- d. list down the abnormal conditions associated with the respiratory system
- e. describe the following:
  - how breathing occurs in humans
  - the role of medulla oblongata in regulating breathing in humans
  - an experiment to show the effect of physical exercises on the rate of breathing
  - an experiment on how to measure lung capacity
  - how gaseous exchange takes place in lungs and tissues
  - how carbon monoxide poisoning occurs
  - how to carry out first aid for carbon monoxide poisoning
  - ways of preventing carbon monoxide poisoning
- f. explain the following:
  - the importance of gaseous exchange in organisms
  - adaptations of respiratory structures in humans to their functions
  - the effects of smoking on lungs

#### **6.3.4.5 Topic: Human Excretory System**

In this topic candidates should be able to:

- a. define osmo-regulation
- b. mention the hormones involved in osmo-regulation
- c. list down the following:
  - parts of the human excretory system
  - the substances excreted by the kidney
- d. differentiate the processes involved in blood purification between dialysis machine and kidney
- e. describe the following:

- how the kidney works in blood filtration
  - how the dialysis machine works
- f. explain the following:
- the functions of the parts of the human excretory system
  - the functions of the parts of the kidney
  - the effects of taking too much/ too little water on the quantity and colour of urine
  - the role of Antidiuretic hormone and Aldosterone in osmo regulation
  - the differences in composition of the fluid in the dialysis machine and blood plasma
  - the causes of kidney failure
  - the remedies of kidney failure
  - problems associated with kidney failure
  - the effects of kidney failure
- g. draw and label the following:
- the parts of the human excretory system
  - parts of the kidney

#### **6.3.4.6 Topic: Coordination**

In this topic candidates should be able to:

- a. list down the following:
  - types of neurones
  - abnormal conditions (diseases) of the nervous system
- b. define the terms:
  - reflex action and reflex arc
  - conditioned reflexes
- c. give examples of reflex actions
- d. describe the following:
  - how nerve impulses are transmitted
  - an experiment that can be conducted to show reflex actions
  - various parts of reflex arcs
  - how conditioned reflexes occur
  - experiments that can be used to show how reflexes occur in coordination
  - how the abnormal conditions affect the nervous system
- e. explain the following:
  - functions of different types of neurones
  - the functions of parts of a neurone
  - the structural differences between the brain and the spinal cord
  - the functions of parts of the central nervous system
  - the importance of reflex actions
- f. draw and label:
  - parts of the neurone
  - parts of the central nervous system
  - various reflex arcs

**6.3.4.7 Topic: Immunity**

In this topic candidates should be able to:

- a. list down the following:
  - examples of organ transplants
  - types of blood groups
  - factors to consider before blood transfusion
- b. explain the following:
  - factors to consider before organ transplant
  - factors to consider before blood transfusion
  - the importance of immunization
- c. describe the following:
  - the role of the lymphatic system on HIV immune response
  - the ABO and Rhesus blood groups
  - how vaccination works
  - the effects of HIV on helper T-cells and killer T-cells

**6.3.4.8 Topic: Infectious and Non – Infectious Diseases**

In this topic candidates should be able to:

- a. state the following:
  - examples of infectious diseases caused by the following organisms:
    - i. bacteria
    - ii. virus
    - iii. fungi
  - the modes of transmission of infectious diseases
  - types of cancer
  - the effects of cancerous cells in the body
  - examples of organs commonly affected by cancer
- b. define the term cancer
- c. explain the following:
  - the signs and symptoms of various infectious diseases
  - the factors that increase the risk of cancer
  - ways of preventing and controlling cancer
- d. describe the following:
  - the modes of transmission of infectious diseases
  - types of cancer
  - causes of cancer
  - management of cancer

**6.3.5 Core Element: Genetics And Evolution**

**6.3.5.1 Topic: Genetics**

In this topic candidates should be able to:

- a. define the following:
  - sex linked characteristics

- variations among organisms
  - mutation
- b. list down the following:
- examples of sex linked characteristics
  - types of cell division
- c. state the following:
- causes of variations among organisms
  - types of variations among organisms
  - the examples of each type of variations among organisms
- d. give the following:
- types of mutations
  - examples of each type of mutations
- e. list down effects of mutations
- f. explain the following:
- functions of chromosomes
  - the differences between meiosis and mitosis
  - how sex is determined in humans
- g. describe the following
- principles of Mendelian genetics
  - sex ratios in families
  - examples of sex linked characteristics
- h. explain the following:
- the variations among organisms
  - the relationship among chromosomes, DNA and genes
  - causes of mutations
  - effects of mutations
- i. describe the following:
- the processes of each type of cell division
  - the structure of chromosomes
  - behaviour of chromosomes during mitosis and meiosis
  - the structure and functions of chromosomes, DNA, and genes
  - the causes of variations among organisms of the same species
  - the types of variations among organisms
  - the examples of mutations
- j. workout the following:
- monohybrid crosses
  - ratios of monohybrid crosses
- k. relate sex ratios to genes
- l. calculate the following in different types of variations
- frequency
  - mean
  - mode
  - median

- range
- m. present experimental data in different forms
- n. draw and label the following for different types of variations
  - bar charts
  - histograms

#### **6.3.5.2 Topic: Evolution**

In this topic candidates should be able to:

- a. define the following terms:
  - evolution
  - natural selection
  - speciation
- b. state the pieces of evidence of evolution
- c. list down examples of natural selection
- d. describe the following:
  - evidence of evolution
  - each example of natural selection
  - how speciation occurs in different situations

#### **6.3.5.3 Topic: Biotechnology**

In this topic candidates should be able to:

- a. define the following terms:
  - Biotechnology
  - Genetic engineering
- b. list down examples of biotechnology in;
  - plants
  - animals
- c. describe the following;
  - plant and animal breeding
  - how biotechnology is applied in: - agriculture
  - medicine
  - manufacturing industry
  - the processes of genetic engineering
  - the processes of insulin production
- d. explain other applications of genetic engineering.
- e. state the benefits and problems associated with biotechnology.

### **6.4 ASSESSMENT FORMAT**

The MSCE Biology papers shall meet the following:

#### **6.4.1 Paper I**

- a. There are 13 compulsory questions.
- b. Time allowed for this paper shall be 2hours.

- c. The paper shall have **two** sections {**A** and **B**}.
- d. Section **A** shall comprise short answers, while section **B** shall comprise restricted essay question(s).
- e. Section **A** shall have **ten** questions worthy **70** marks, while section **B** shall have **3** questions with **30** marks giving a total of **100** marks.
- f. Questions in the paper may have split/sub questions e.g. 11 a, 11 b, etc.
- g. Basic or standard scientific calculators shall be used in the papers.
- h. Candidates shall use the spaces provided on the question paper to write answers.

#### **6.4.2 Paper II**

- a. There are **four** compulsory questions.
- b. Time allowed for this paper shall be **1 hour 30 minutes**.
- c. The paper shall have two sections (**A** and **B**).
- d. Section **A** shall comprise descriptive questions, while section **B** shall comprise experimental questions on practical work.
- e. Descriptive question would involve use of slides, photographs, thought experiments and critique of experimental procedures.
- f. Section B shall have experimental questions worthy **20** marks, while section A shall have descriptive questions worthy **20** marks giving a total of **40** marks.
- g. Basic or standard scientific calculators shall be used in the papers.
- h. Candidates shall use the spaces provided on the question paper to write answers.

#### **6.5 PERFORMANCE GRADE DESCRIPTORS**

Candidates at MSCE shall demonstrate the skills and competences shown in table below at Pass, Credit and Distinction grade categories.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates should be able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. Remembering of previously learned information.</li> <li>2. Good graphical skills.</li> <li>3. Partially analytical skills.</li> <li>4. Partially making accurate observations.</li> </ol>	<p>Candidates should be able to demonstrate the following abilities including all the skills under pass:</p> <ol style="list-style-type: none"> <li>1. Designing an experiment.</li> <li>2. Partially analysing given information.</li> <li>3. Partial organisational skills</li> <li>4. Partial interpretation of information and diagrams.</li> <li>5. Ability to draw diagrams and graphs.</li> <li>6. Partial manipulative skills.</li> </ol>	<p>Candidates should be able to demonstrate the following abilities including all the skills under credit:</p> <ol style="list-style-type: none"> <li>1. Good interpretation of information and diagrams.</li> <li>2. Good organisational skills.</li> <li>3. Good judgemental skills.</li> <li>4. Ability to apply information to different situation.</li> <li>5. Ability to carry out mathematical calculations.</li> <li>6. Ability to draw conclusions.</li> <li>7. Good graphical presentation skills.</li> </ol>

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## **7.0 MSCE BUSINESS STUDIES EXAMINATION SYLLABUS**

### **7.1 INTRODUCTION**

The rationale for assessment in Business Studies is to determine students' abilities to solve real life problems in the ever-changing business world. Students shall be equipped with knowledge and skills to apply analytical, research, technological, entrepreneurial and critical thinking skills in a creative and innovative way. The skills shall further be used in the field of entrepreneurship for the promotion of self-reliance and national development.

### **7.2 AIMS OF THE SYLLABUS**

The aims of MSCE Business Studies examination syllabus have been drawn from the core elements of the teaching syllabus. This syllabus takes into account the national needs and the future employment and careers of the candidates as stipulated in the national curriculum. The aims are to enable candidates to:

1. demonstrate an understanding of the nature of business and influence of the environment on business;
2. apply the principle of trade and aids to trade in business;
3. demonstrate an understanding of the formation of business units, privatization and the importance of human resource in business organization;
4. demonstrate an understanding of the role of money in business and various sources of financing business;
5. demonstrate an ability to maximize production using available resources profitably;
6. apply entrepreneurship skills for self employment and job creation.

### **7.3 ASSESSMENT OBJECTIVES**

#### **7.3.1 Core Element: Trade and Aids to Trade**

##### **7.3.1.1 Topic: Foreign Trade**

In this topic, candidates should be able to:

- a. differentiate home trade from foreign trade
- b. mention major imports and exports of Malawi
- c. explain the difference between favourable and unfavourable balance of trade
- d. describe divisions of foreign trade e.g. export trade, import trade and entrepot

##### **7.3.1.2 Topic: Trade Documents**

In this topic, candidates should be able to:

- a. mention types of home and foreign trade documents
- b. state the importance of trade documents
- c. describe different types of home and foreign trade documents
- d. prepare different home trade documents

### **7.3.1.3 Topic: Trade**

In this topic, candidates should be able to:

- a. define terms related to trade and aids to trade e.g. liberalisation, globalization, etc
- b. state advantages and disadvantages of liberalization and globalization
- c. mention forms of economic integration and types of trade protocols
- d. state roles of organizations that promote trade in Malawi e.g. Malawi Bureau of Standards (MBS), Malawi Investment Trade Centre (MITC), Malawi Confederation Chamber of Commerce and Industry (MCCI), Indigenous Business Association of Malawi (IBAM), etc
- e. describe trade protocols and forms of economic integrations
- f. describe the roles of Government in promoting trade e.g. central and local government
- g. describe the objectives of institutions that promote trade in Malawi e.g. Malawi Bureau of Standards (MBS), Malawi Investment Trade Centre (MITC), Malawi Confederation Chamber of Commerce and Industry (MCCI), Indigenous Business Association of Malawi (IBAM), etc

### **7.3.2 Core Element: Business Organisation**

#### **7.3.2.1 Topic: Non-profit Making Organisations**

In this topic, candidates should be able to:

- a. define terms in the topic e.g. non-profit making organizations, cooperative societies, etc
- b. state examples of non-profit making organizations
- c. describe main forms of cooperative societies
- d. explain the importance of different forms of cooperative societies

#### **7.3.2.2 Topic: Statutory Corporations**

In this topic, candidates should be able to:

- a. define terms in the topic e.g privatization
- b. mention types of statutory corporations and forms of privatization
- c. state privatized industries in Malawi
- d. describe the formation of statutory corporations
- e. explain the advantages and disadvantages of statutory corporation and privatization
- f. explain reason for formation of statutory corporations and privatization

### **7.3.3 Core Element: Business Finance**

#### **7.3.3.1 Topic: Non-bank Financial Institutions**

In this topic, candidates should be able to:

- a. mention sources of business finance
- b. list non-bank financial institutions in Malawi
- c. explain terms and conditions for non-bank services

### **7.3.3.2 Topic: Insurance**

In this topic, candidates should be able to:

- a. define terms used in insurance e.g. insurance, hedging, insurance fraud, business risk management, etc
- b. mention institutions that provide insurance services in Malawi
- c. state different business risks
- d. describe the following:
  - i. business risks and forms of insurance fraud
  - ii. ways of hedging against business risks
- e. explain the following:
  - i. business risk management strategies
  - ii. the nature and purpose of insurance, and different types of insurance
  - iii. main insurance principles e.g. insurable interest, utmost good faith and indemnity

### **7.3.4 Core Element: Production**

#### **7.3.4.1 Topic: Production**

In this topic, candidates shall be able to:

- a. define terms used in production e.g. stock level, stock control, etc
- b. state production steps and types of inputs in production
- c. describe stock taking
- d. explain the production steps for goods and services

#### **7.3.4.2 Topic: Production Cost**

In this topic, candidates should be able to:

- a. describe the following:
  - i. economies and diseconomies of scale
  - ii. factors that influence the location of a business
- b. explain the relationship between inputs and outputs in production
- c. classify fixed and variable cost
- d. calculate production costs, revenue and profits
- e. construct and interpret break-even chart

### **7.3.5 Core Element: Entrepreneurship**

#### **7.3.5.1 Topic: Entrepreneurship**

In this topic, candidates should be able to:

- a. list characteristics of an entrepreneur
- b. state rewards of entrepreneurship
- c. distinguish entrepreneurship from entrepreneur
- d. describe the characteristics of an entrepreneur
- e. explain rewards of entrepreneurship

**7.3.5.2 Topic: Small Businesses**

In this topic, candidates should be able to:

- a. define terms used in small business e.g. business growth, small business, etc
- b. list contributions of small scale business to the economy of the country
- c. mention methods used in business growth and in setting up a business
- d. state various support and aids for new businesses
- e. explain the following:
  - i. rewards, competitive strengths and challenges of small businesses
  - ii. contributions of small scale businesses to the economy of the country
  - iii. methods used in setting up a business
  - iv. various support and aids for new business

**7.3.5.3 Topic: Marketing**

In this topic, candidates should be able to:

- a. define terms used in marketing e.g. marketing, marketing mix, etc
- b. list types of products
- c. describe marketing objectives, market segment, market strategy and market research in business
- d. describe niche and mass marketing, and types of products
- e. explain the following:
  - i. marketing process and channels of distribution
  - ii. the role of products, price, promotion, and place in marketing mix
- f. illustrate product life cycle

**7.3.5.4 Topic: Consumer Protection**

In this topic, candidates should be able to:

- a. define terms in relation to consumer protection
- b. list consumer protection organizations in Malawi
- c. outline reasons for consumer protection
- d. explain the following:
  - i. the rights and responsibilities of a consumer
  - ii. the role of Government and consumer protection organizations in Malawi
- e. describe major Acts of Parliament that protect the consumer in Malawi

**7.3.5.5 Topic: Human Resource**

In this topic, candidates should be able to:

- a. define terms as used in human resource e.g. human resource, wage, salary, etc
- b. mention motivational factors for employees and financial rewards of an employee
- c. differentiate wages and salaries as methods of payment
- d. describe the following:
  - i. management styles and different approaches to human resource management e.g. recruitment, selection, induction, training and dismissal

- ii. employees motivation in relation to Abraham Maslow's hierarchy of needs
- iii. factors that determine wages and salaries
- e. explain the following:
  - i. the importance of human resource and employees motivation in a business organization
  - ii. financial rewards of an employee and systems of payment
- f. prepare a pay slip
- g. calculate gross pay and net pay

#### **7.3.5.6 Topic: Taxation**

In this topic, candidates should be able to:

- a. define terms as used in taxation e.g. tax, taxation, etc
- b. list the purposes of taxation
- c. state advantages and disadvantages of direct and indirect taxes
- d. mention types and forms of taxes
- e. describe the principles of taxation, forms and types of taxes
- f. explain the following:
  - i. the roles of taxation in trade and economy of the country
  - ii. methods of collecting taxes and Government expenditure on revenue
- g. calculate different forms of taxes e.g. Pay As You Earn, Value Added Tax, Custom Duty, Excise Duty, etc

#### **7.3.5.7 Topic: Business Accounting**

In this topic, candidates should be able to:

- a. define terms used in business accounting e.g. business accounting, capital assets, liabilities, depreciation, balance sheet, profit and loss account, trading account, trial balance, cash flow statement, gross and net profit, working capital, etc
- b. mention uses of accounting information
- c. differentiate assets from liabilities
- d. describe contents of books of original entry
- e. record business transactions from source documents
- f. calculate the following:
  - i. depreciation of assets using straight line or reducing balance methods
  - ii. gross, net profit and loss using trading and profit and loss account
  - iii. working capital
- g. prepare business accounts e.g. balance sheet, trading account, profit and loss account, etc
- h. construct and interpret a simple cash flow statement

### **7.4 ASSESSMENT FORMAT**

The MSCE Business Studies papers shall meet the following:

#### **7.4.1 Paper I**

- Time allowed for this paper shall be 2hours.

- The paper shall have **2** sections, **A** and **B**.
- Section **A** shall comprise of short answers, while section **B** shall comprise of restricted essay question(s).
- The paper shall have **10** questions where section **A** shall have **6** questions worthy **60** marks, while section **B** shall have **4** questions with **40** marks giving a total of **100** marks.
- The questions in the paper may have split/sub essay questions e.g. 1 a, 1 b, etc.
- The paper shall have space for answering the questions and **all** questions shall be answered.
- **All** calculations must be done clearly and shown in the spaces provided in the question paper.
- Basic calculators or standard scientific calculators may be used during examinations.

#### **7.4.2 Paper II**

- Time allowed for this paper shall be **1 hour 30 minutes**.
- The paper shall have **three** questions on business calculations.
- Questions **1** and **2** shall have **20** marks each and question **3** shall have **10** marks giving a total of **50** marks.
- The questions in the paper may have split/sub essay questions e.g. 1 a, 1 b, etc.
- The paper shall have space for answering the questions and **all** questions shall be answered.
- **All** calculations must be done clearly and shown in the spaces provided in the question paper.
- Basic calculators or standard scientific calculators may be used during examinations.

#### **7.5 PERFORMANCE GRADE DESCRIPTORS/DIFFERENTIATORS**

Table below shows expected skills and competencies to be demonstrated by candidates in MSCE Business Studies examination at a Pass, Credit and Distinction grade categories.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates with a <b>PASS</b> shall be able to demonstrate the following skills and competencies:</p> <ol style="list-style-type: none"> <li>1. giving meaning of business terms;</li> <li>2. recalling information;</li> <li>3. interpreting simple graphs, tables and information;</li> <li>4. partially explaining facts;</li> <li>5. partially classifying production costs and business information; and</li> <li>6. carrying out simple calculations relating to</li> </ol>	<p>Candidates with a <b>CREDIT</b> shall show all skills and competencies under <b>PASS</b> and in addition, the following:</p> <ol style="list-style-type: none"> <li>1. properly explaining facts;</li> <li>2. differentiating terms in Business Studies;</li> <li>3. recording business information in trade documents;</li> <li>4. properly classifying business information; and</li> <li>5. calculating depreciation using straight-line or reducing balance.</li> </ol>	<p>Candidates with a <b>DISTINCTION</b> shall show all skills and competencies under <b>CREDIT</b> and in addition, the following:</p> <ol style="list-style-type: none"> <li>1. presenting information in logical order;</li> <li>2. interpreting business information, diagrams and tables;</li> <li>3. preparing different trade documents and business accounts;</li> <li>4. calculating total revenue, profits and margin of safety by using break-even chart;</li> <li>5. working out cost of sales, gross profit/loss and net profit/loss</li> </ol>

business problems e.g. calculating taxes.	<ul style="list-style-type: none"> <li>6. using trading and, profit and loss account;</li> <li>6. calculating working capital using balance sheet;</li> <li>7. interpreting cash flow statement to find receipts, payments and working capital.</li> </ul>
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## **8.0 MSCE CHEMISTRY EXAMINATIONS SYLLABUS**

### **8.1 INTRODUCTION**

The Chemistry MSCE Examination syllabus guides candidates to demonstrate knowledge of fundamental theoretical and practical principles of science which are useful in the understanding of the technological world. It also helps to assess scientific attitudes such as curiosity, creativity and inquiring mind towards science and scientific developments.

### **8.2 AIMS OF THE SYLLABUS**

Chemistry syllabus must take into account the national needs and the future employment and career of the students. The syllabus aims enabling candidates to:

1. develop knowledge and skills of the use of scientific methods, techniques and materials to solve problems in their daily lives
2. demonstrate an understanding of properties of various organic substances, their use in the manufacturing industry and the dangers they pose on the environment
3. promote understanding of the composition and properties of various natural and synthetic substances which form their environment
4. demonstrate an understanding of reaction dynamics and chemical energetics essential for the advancement of the chemical and manufacturing industry
5. promote creative use of knowledge and skills on the composition and reactivity of organic compounds for safe and efficient utilisation of resources around them
6. develop an understanding of the application of Chemistry in solving real life problems and the potential harmful effects of chemicals and chemical processes on the environment and human health

### **8.3 ASSESSMENT OBJECTIVES**

#### **8.3.1 Core Element: Analytical Skills In Chemistry**

##### **8.3.1.1 Topic: Experimental Techniques**

Candidates should be able to:

- a. state waste products from chemical reactions. e.g. acids, bases, harmful salts
- b. describe safe ways of disposing chemical wastes in the laboratory
- c. describe simple test on water, ions and gases. E.g. test for aqueous anions, carbon dioxide, presence of water using unhydrous salts
- d. design scientific investigation in Chemistry
- e. carry out various investigations in Chemistry on a given context

#### **8.3.2 Core Element: Inorganic Chemistry**

##### **8.3.2.1 Topic: Nitrogen, Sulphur and Phosphorous.**

Candidates should be able to:

- a. describe sources, properties and uses of nitrogen, sulphur, phosphorous and their compounds

- b. explain preparation and use of nitrogen, sulphur and phosphorous compounds
- c. explain the application of nitrogen, sulphur and phosphorous in everyday life

### **8.3.3 Core Element: Chemical Composition of Matter**

#### **8.3.3.1 Topic: Chemical Bonding and Properties of Matter**

Candidates should be able to:

- a. define allotropy
- b. state types of inter molecular forces (hydrogen bonding, and van Dar Waals forces)
- c. explain the following:
  - i. structural differences between ionic and covalent compounds
  - ii. the properties of allotropes of elements and their uses
  - iii. the difference between pure covalent bonds and dative covalent bonds in terms of electron sharing
  - iv. uses of alloys e.g. cans, electric cables, aircrafts bodies, surgical instruments cutlery and car bodies
- d. differentiate polar and non polar covalent compounds
- e. describe the following:
  - i. physical properties of covalent and ionic compounds. E.g. solubility, volatility, electrical conductivity, melting and boiling points, etc
  - ii. uses of metals in relation to their properties
  - iii. the effect of intermolecular forces on properties of matter

### **8.3.4 Core Element: Chemical Reactions**

#### **8.3.4.1 Topic: Stoichiometry**

Candidates should be able to:

- a. define standard solution
- b. explain the meaning of a ‘mole of a substance’
- c. describe steps in preparation of standard solution
- d. work out the relative formula mass of a compound
- e. write balanced chemical equation
- f. convert moles into other units of measurements and vice versa. e.g. mass, gas volume, number of particles
- g. calculate the following:
  - i. concentration of solutions
  - ii. the theoretical yield and percentage yield of a given chemical reaction
- h. workout the following:
  - i. the percentage of water in molecular and hydrated ionic compounds
  - ii. concentration of solutions using titration
  - iii. the limiting and excess reagents in a chemical reaction
- i. deduce empirical and molecular formulae from relevant data

**8.3.4.2 Topic: Heats of Reactions**

Candidates should be able to:

- a. define the terms, exothermic and endothermic reactions in relation to heat changes
- b. define bond energy
- c. interpret energy level diagrams
- d. explain the energy changes involved in bond breaking and bond formation
- e. describe temperature changes in exothermic and endothermic reactions and processes
- f. draw energy level diagrams for exothermic and endothermic reactions
- g. calculate the overall energy change of reactions using bond energies
- h. investigate temperature changes in exothermic and endothermic reactions and processes

**8.3.4.3 Topic: Rates of Reactions**

Candidates should be able to:

- a. define 'rate of reaction'
- b. describe the following:
  - i. factors that affect rate of reactions
  - ii. reversible and irreversible reactions
- c. deduce rates of reaction by using rate of change of mass reactants or volume of gas produced
- d. plot and interpret volume/mass-time graphs
- e. investigate the following:
  - i. factors that affect rates of reactions
  - ii. reversible and irreversible changes in chemical substances

**8.3.4.4 Topic: Acids and Bases**

Candidates should be able to:

- a. define acids and bases according to L/B theory
- b. state the following:
  - i. conjugate acid-base pairs from given equations
  - ii. applications of precipitation
- c. explain ways of regulating pH in different environment as applications of neutralisation reactions
- d. differentiate between strength and concentration of acids and bases
- e. classify oxides as acidic, basic or amphoteric
- f. describe ways of preparing salts. e.g. neutralisation, precipitation, reaction of acids with metals
- g. investigate the relative strengths of acids and bases using conductivity and pH
- h. carry out experiments on the reactions of oxides with acids and bases
- i. design ways of preparing and purifying soluble and insoluble salts

**8.3.4.5 Topic: Oxidation – Reduction Reaction.**

Candidates should be able to:

- a. define oxidation, reduction, reducing agent and oxidising agent
- b. state the following:
  - i. reducing and oxidising agent from a given equation basing on changes in oxidation numbers
  - ii. conditions necessary for corrosion
- c. explain the following:
  - i. the spontaneity of a reaction in metals
  - ii. methods of preventing corrosion
- d. describe the process of corrosion
- e. write balanced half and overall redox equations
- f. workout oxidation number of an atom present in an element, ion or compound
- g. deduce the order of reactivity of metals
- h. calculate the potential difference between different metals using voltage series

**8.3.4.6 Topic: Electrolysis**

Candidates should be able to:

- a. explain the following:
  - i. products of electrolysis of molten and aqueous ionic compounds
  - ii. the applications of electroplating
  - iii. uses of electrolysis
- b. deduce preferential discharge of very reactive metals and noble metals
- c. describe the following processes
  - i. electrolysis
  - ii. purification of copper
- d. write balanced half and overall electrolytic equations
- e. investigate the electrolysis of copper (II) sulphate using inert (graphite) and copper electrodes
- f. investigate electrolysis of molten and aqueous ionic compounds. E.g. lead bromide and aqueous sodium iodide

**8.3.5 Core Element: Organic Chemistry**

**8.3.5.1 Topic: Alkanols**

Candidates should be able to:

- a. name the first ten unbranched alkanols
- b. write and name branched chain alkanols
- c. write the molecular and condensed formulae of the first ten alkanols given the number of carbon atoms
- d. explain the following:
  - i. polarity of alkanols

- ii. uses of alkanols
- e. draw structures and skeletal formulae of the first ten unbranched alkanols
- f. classify alkanols as primary, secondary and tertiary
- g. describe the following:
  - i. methods of preparing alkanols
  - ii. the chemical reactions of alkanols
- h. investigate trends in the physical properties of alkanols

#### **8.3.5.2 Topic: Alkanals and Alkanones**

Candidates should be able to:

- a. state uses of alkanals and alkanones
- b. name structures of the first five straight chain alkanals and alkanones using IUPAC rules
- c. write molecular formula of the first five alkanals and alkanones
- d. explain trends in physical properties of alkanals and alkanones
- e. draw structures of the first alkanals and alkanones
- f. differentiate structures of the first five alkanals and alkanones
- g. describe the following:
  - i. sources of alkanals and alkanones
  - ii. chemical properties of alkanals and alkanones
  - iii. tests to distinguish alkanals and alkanones
- h. carry out test to distinguish alkanals and alkanones

#### **8.3.5.3 Topic: Alkanoic Acids**

Candidates should be able to:

- a. state the following:
  - i. uses of alkanoic acids
  - ii. natural sources of alkanoic acids
- b. name the first ten alkanoic acids
- c. write the molecular formula and condensed formulae of the alkanoic acids given the number of carbon atoms
- d. draw structures and skeletal formulae of the first ten alkanoic acids
- e. describe the following:
  - i. physical and chemical properties of alkanoic acids
  - ii. the process of preparing of alkanoic acids from oxidation of alkanols and alkanals
- f. investigate the following:
  - i. trends in the physical properties of alkanoic acids
  - ii. chemical reactions of alkanoic acids

#### **8.3.5.4 Topic: Alkanoates**

Candidates should be able to:

- a. name alkanoates
- b. state the following:

- i. sources of alkanoates given the structure or number of carbon atom
- ii. properties of alkanoates
- iii. uses of alkanoates
- c. draw structures formed from a given alkanoic acid and alkanol
- d. describe the following:
  - i. process of preparation of esters
  - ii. process of soap making
- e. deduce reactants of esterification given the structure of the product of the reaction

#### **8.3.5.5 Topic: Identification of Unknown Organic Compounds**

Candidates should be able to:

- a. deduce the family and structural formula of unknown organic compounds given relevant information
- b. distinguish organic compounds basing on their tests

#### **8.3.5.6 Topic: Isomerism**

Candidates should be able to:

- a. name isomers using IUPAC naming system given structures
- b. define isomers
- c. draw isomers of alkanes, alkene, alkanois, alkanals, alkanones, and alkanoic acids up to five carbon atoms
- d. explain the polarity of different organic compounds
- e. differentiate isomers and conformers from given structures
- f. describe the effect of branching on physical properties in different organic compounds

#### **8.3.5.7 Topic: Polymerisation**

Candidates should be able to:

- a. define monomer and polymer
- b. list examples natural and synthetic of polymers
- c. explain the difference between thermo softening and thermosetting plastics
- d. describe the following:
  - i. types of polymerisation
  - ii. properties and uses of synthetic polymers
- e. investigate differences between thermo softening and thermosetting plastics

#### **8.3.6 Core Element: Environmental Chemistry**

##### **8.3.6.1 Topic: Water**

Candidates should be able to:

- a. state natural sources of water
- b. define water pollution.
- c. describe the following:
  - i. sources, effects and prevention of water hardness

- ii. the physical properties and uses of water
- iii. water hardness, types and its effects
- iv. methods used to remove water hardness
- d. explain the water cycle
- e. investigate on removing water hardness

#### **8.3.6.2 Topic: Green House Gases and the Ozone Layer**

Candidates should be able to:

- a. define green house gases
- b. state the following:
  - i. sources of green house gases
  - ii. problems associated with the depletion of Ozone layer
- c. explain the effects of natural disasters on the atmosphere. E.g. volcanoes and bush fires
- d. describe the following:
  - i. effects of human activities on the atmosphere e.g. burning of organic fuels, deforestation, and use of CFCs
  - ii. the contribution of carbon dioxide and methane to global warming
  - iii. ways of mitigating the effect of global warming
- e. explain the importance of Ozone layer
- f. describe the depletion of Ozone layer by action of CFC

#### **8.3.6.3 Topic: Waste Management**

Candidates should be able to:

- a. classify wastes based on; physical state and degradability
- b. state the following:
  - i. major sources of wastes
  - ii. ways of minimizing wastes
- c. explain physical and chemical characterisation of wastes
- d. describe ways of treating and disposing wastes
- e. explain the following:
  - i. advantages and disadvantages of different ways of waste treatment and disposal e.g. landfills, incineration and recycling
  - ii. the process of recycling metals and plastics

### **8.4 ASSESSMENT FORMAT**

The MSCE Chemistry papers shall meet the following:

#### **8.4.1 Paper 1**

- a. The paper shall have **13** compulsory questions.
- b. Time allowed for this paper shall be **2hours**.
- c. The paper shall have **two** sections, **A** and **B**.
- d. Section **A** shall comprise short answers, while section **B** shall comprise restricted essay question(s).

- e. Section **A** shall have **ten** questions worthy **70** marks, while section **B** shall have **3** questions with **30** marks giving a total of **100** marks.
- f. Questions in the paper may have split/sub questions e.g. 11 a, 11 b, etc.
- g. Basic or standard scientific calculators shall be used in the papers.
- i. Candidates shall use the spaces provided on the question paper to write answers.

#### **8.4.2 Paper II**

- a. There are **four** compulsory questions.
- b. Time allowed for this paper shall be **1 hour 30 minutes**.
- c. The paper shall have two sections (**A** and **B**).
- d. Section **A** shall comprise descriptive questions, while section **B** shall comprise experimental questions on practical work.
- e. Descriptive question would involve use of slides, photographs, thought experiments and critique of experimental procedures.
- i. Section B shall have experimental questions worthy **20** marks, while section A shall have descriptive questions worthy **20** marks giving a total of **40** marks.
- j. Basic or standard scientific calculators shall be used in the papers.
- k. Candidates shall use the spaces provided on the question paper to write answers.

#### **8.5 PERFORMANCE GRADE DESCRIPTORS**

Candidates at MSCE shall demonstrate the skills and competences shown in table below at Pass, Credit and Distinction grade categories.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates were able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. Following instructions</li> <li>2. Recalling facts</li> <li>3. Drawing and labelling graphs</li> <li>4. Observing and recording findings</li> <li>5. Giving meanings of scientific terms and notations</li> <li>6. Interpreting basic diagrams</li> <li>7. Using basic formula in calculations</li> <li>8. Partially classifying information</li> </ol>	<p>Candidates showed all skills under pass and in addition, the following skills were observed:</p> <ol style="list-style-type: none"> <li>1. Interpreting graphs and diagrams</li> <li>2. Proper classification of chemicals and information</li> <li>3. Apply scientific laws and principals</li> <li>4. Partial explanation of facts and structures</li> <li>5. Describing experiments, processes and terms.</li> <li>6. Classification of information and structures.</li> <li>7. Differentiating term, items and processes.</li> </ol>	<p>Candidates showed all skills under credit and in addition, the following abilities were demonstrated;</p> <ol style="list-style-type: none"> <li>1. Proper organisational skills</li> <li>2. Presenting facts in logical order.</li> <li>3. Outlining procedures and processes</li> <li>4. Analysing information presented in graphical or tabular form</li> <li>5. Balancing of chemical equations</li> <li>6. Identifying chemicals using flow diagrams</li> <li>7. Drawing conclusions</li> <li>8. Carrying out mathematical calculations</li> <li>9. Interpreting investigation/experimental results</li> <li>10. Interpreting graphical or tabular data</li> <li>11. Designing experiment</li> </ol>

		12. Carrying out experiments 13. Fully explaining facts and structures 14. Deducing formulae
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**9.0 SILABASI YA MAYESO A PHUNZIRO LA CHICHEWA MSCE**

**9.1 ZOLINGA ZIKULUZIKULU ZA SILABASI**

Zolinga zikuluzikulu za silabasi ya mayeso a Chichewa ndi izi:

- a. Kuyesa ophunzira Chichewa kumapeto a maphunziro a sekondale motsatira zomwe zili mu silabasi yophunzitsira phunziro la Chichewa ya Fomu 3 ndi 4.
- b. Kuyesa ophunzira Chichewa pofuna kupeza kuthekera kwawo kodzagwira ntchito komanso kudzapitiriza maphunziro awo.

**9.2 ZOLINGA ZA MAYESO A CHICHEWA**

Ophunzira:

- a. awerenge ndipo ayankhe mafunso kuchokera mu nkhani zosiyanasiyana zomwe awerenga mwachinunu.
- b. alembe zimangirizo / kalata pa nkhani zosiyanasiyana zonna kapena zopeka.
- c. alembe chimasuliro ndi chifupikitso pa nkhani zosiyanasiyana.
- d. agwiritse ntchito moyenera malamulo a chiyankhulo.
- e. azukute mozama masewero / zisudzo, nkhani / nthano ndi ndakatulo.
- f. ayankhe mafunso okhudzana ndi za chikhaliidwe cha Amalawi.

**9.3 MNDANDANDA WA MAYESO**

**9.3.1 Paper I**

**Chimangirizo/Kalata ndi Za Chikhaliidwe cha Amalawi (Malikisi 60)**

**NTHAWI:** 1Hour 45 Minutes

**9.3.2 Paper II:**

**Malamulo a Chiyankhulo,Kumvetsa Nkhani ndi Kusanthula Chiyankhulo,  
Chifupikitso ndi Chimasuliro (Malikisi 90)**

**NTHAWI:** 2 Hours

**9.3.3 Paper III:**

**Nkhani Za Mchezo ndi Zolembedwa (Malikisi 70)**

**NTHAWI:** 2 Hours

**9.4 TSATANETSATANE WA MAYESO**

**9.4.1 Paper I:**

Pepalali lili ndi magawo awiri: Gawo A ndi B.

**9.4.1.1 GAWO A: CHIMANGIRIZO KAPENA KALATA (Malikisi40)**

M'gawoli muli mafunso awiri ndipo ophunzira ayenera kulemba chimangirizo kapena kalata. Mawu a chimangirizo kapena kalata asachepere 300 koma asapitirire 400. Malikisi amaperekedwa pa kayalidwe ka mfundo, malamulo achiyankhulo, mfundo zisanu zotambasulidwa bwino ndi nsinjiro zisanu zogwiritsidwa ntchito moyenera m'ndime.

Chimangirizo chitha kukhala m'mitundu yosianasiyana monga: chofotokoza, chamtsutso, chopeka. Kalata itha kukhala yamchezo kapena yantchito. Chimangirizo kapena kalata zitha kuchokera pa mitu monga:

- a. ulamuliro wabwino
- b. zikhulupiriro
- c. nkhanza
- d. ngozi zogwa mwadzidzidzi
- e. mankhwala ozunguza bongo
- f. matenda opatsirana monga Edzi.

**Chimangirizo chiyenera kukhala ndi zigawo izi:**

- a. mutu
- b. chiyambi
- c. thunthu
- d. mathero

**Kalata yantchito iyenera kukhala ndi:**

- a. keyala ya yemwe akulemba kalata ndipo iyenera kulembedwa kumanja kwa pepala lolembapo.
- b. keyala ya yemwe akalandire kalatayo ndipo iyenera kulembedwa kumanzere kwa pepalalo kudumpha mzere umodzi m'munsi mwa tsiku lolemba kalata
- c. tsiku lomwe yalembedwa m'munsi mwa keyala ya yemwe akulemba kalatayo.
- d. malonje m'munsi mwa keyala ya yemwe akalandire kalatayo

**Kalata iyenera kukhala ndi zigawo izi:**

- a. mutu
- b. chiyambi
- c. thunthu
- d. mathero

Ophunzira atha kulemba keyala ya chipupa kapena ya makwerero. Asalembe onse awiri. Keyala ya chipupa isakhale ndi zizindikiro za m'kalembedwe.

Malikisi adzachotsedwa ngati ophunzira:

- a. alemba keyala imodzi m'malo mwa awiri
- b. alemba tsiku pogwiritsa ntchito madashi ndi masilashi mwachitsanzo, 10 – 06 – 20 kapena 10 / 06 / 20

- c. alakwitsa kulemba malonje mwachitsanzo, *Wokondedwa Abwana/Adona*, m'malo molemba *Wokondedwa Abwana* kapena *Wokondedwa Adona*
- d. asempanitsa malo olembapo malonje ndi mutu wakalata
- e. alemba dzina limodzi kumapeto kwa kalata

Ophunzira ayenera kulemba chimangirizo kapena kalata pa masamba oyankhirapo omwe amaperekedwa.

#### **9.4.1.2 GAWO B: ZA CHIKHALIDWE CHA AMALAWI (Malikisi20)**

Ophunzira ayenera kusonyeza kuganiza mozama poyankha mafunso okhudza malonje operekedwa, mauthenga ndi malangizo.

Malonje atha kukhala monga:

- a. a paukwati
- b. a pantchito yachitukuko
- c. a pamsonkhano
- d. a pamatenda
- e. a pamaliro
- f. a pamilandu

Malangizo atha kukhala monga:

- a. a kusamala chakudya
- b. a pantchito
- c. a kugawa chuma
- d. a kusasalana
- e. a kuchulukana
- f. a makhalidwe oipa.

Mauthenga atha kukhala monga:

- a. a zaumoyo
- b. a kusamalira odwala
- c. a kusamalira chilengedwe
- d. a kufuna malo atsopano
- e. a ntchito yachitukuko
- f. a mwayi wantchito.

Ophunzira ayenera kulemba mayankho m'mipata yoperekedwa pansi pa funso lililonse.

#### **9.4.2 Paper II: Malamulo a Chiyankhulo, Kumvetsa Nkhani ndi Kusanthula Chiyankhulo, Chifupikitso ndi Chimasuliro**

Pepalali lili ndi magawo anayi: Gawo A, B, C ndi D.

**9.4.2.1 Gwo A: MALAMULO A CHIYANKHULO** (Malikisi 40)

M'gawoli muli mafunso anayi a malamulo a chiyankhulo. Funso lililonse lili ndi malikisi 10. Ophunzira ayenera kuyankha mafunso onse anayi m'gawoli m'mipata yoperekedwa pansi pa funso lililonse.

Mafunso a malamulo a chiyankhulo atha kuchokera pa mitu monga iyi:

- a. kapangidwe ka mayina, afotokozi, aonjezi
- b. mitundu ya aneni
- c. nthawi za aneni
- d. kachitidwe ka aneni
- e. kanenedwe ka aneni
- f. msintho wa aneni
- g. mitundu ndi ntchito za mifuwu
- h. magulu ndi mitundu ya mimvekero
- i. zizindikiro za m'kalembedwe
- j. mitundu ndi ntchito za alumikizi ndi aperekezi
- k. mitundu ya agwirizanitsi
- l. zoyankhula mwini ndi zoyankhula wina
- m. mitundu ndi ntchito za akapandamneni
- n. mitundu ndi ntchito za nthambi
- o. kuphwanya ziganizo pounika mawu paokhapaokha
- p. ntchito za 'li', 'ti' ndi 'ndi'.

Malikisi adzachotsedwa ngati ophunzira alephera kutsatira malamulo a chiyankhulo, alemba mayankho m'ziyankhula zina monga: Chitumbuka, Chiyawo, Chingerezi, alakwitsa kulemba mawu, agwiritsa ntchito zizindikiro za m'kalembedwe molakwika.

**9.4.2.2 Gwo B: KUMVETSA NKHANI NDI KUSANTHULA CHIYANKHULO** (Malikisi 20)

Ophunzira ayenera kuyankha mafunso atatha kuwerenga nkhanzi yoperekedwa. Mayankho ayenera kukhala m'ziganizo zomveka bwino motsatira malamulo a chiyankhulo. Mayankhowo alembedwe m'mipata yoperekedwa pansi pa funso lililonse.

Nkhani zoperekedwa zitha kukhala pa mitu monga iyi:

- a. uchembere wabwino
- b. kupirira
- c. kuthetsa mikangano
- d. zachuma
- e. kusintha kwa nyengo
- f. katangale ndi ziphuphu

Ophunzira ayenera kusanthula chiyankhulo popeza matanthauzo a zining'a ndi mikuluwiko, mawu ofanana m'matanthauzo, mawu otsutsana m'matanthauzo kuchokera m'nhani yoperekedwa. Mawu ofanana kapena otsutsana m'matanthauzo ngati ndi aneni, ayenera kukhala m'nthawi ya aneni yofanana. Ayeneranso kukhala a mtundu umodzi wa mawu.

Funso likakhala chining'a, yankho liyenera kukhala kapandamneni. Afotokozi ayenera kugwiritsidwa ntchito pomwe ophunzira afunsidwa kulemba makhaldidwe a apangankhani.

**9.4.2.3 Gwo C: CHIFUPIKITSO (Malikisi 15)**

Ophunzira ayenera kulemba chifupikitso kuchokera m'nhani yoperekedwa. Mawu a chifupikitso ayenera kukhala gwo limodzi la magawo atatu (1/3) a nkhan'i yoperekedwa. Chifupikitso chiyenera kukhala ndi ndime zofanana ndi nhani yoperekedwa. Ophunzira ayenera kulemba chifupikitso m'mipata yoperekedwa.

Nkhani zoperekedwa zitha kukhala pa mitu monga iyi:

- a. maphunziro
- b. ulimi wamakono
- c. kusasiyana akazi ndi amuna pa ntchito
- d. kusasalana
- e. zachuma
- f. zamalonda
- g. zachitukuko
- h. katangale ndi ziphuphu
- i. ntchito zamanja

Ophunzira ayenera kupeza mu nhani mitu ikuluikufo. Mituyo ailembe momveka bwino m'ndime osaika manambala a mfundo zavo. Nthawi ya m'enfri m'chifupikitso iyenera kugwirizana ndi yomwe ili mu nhani yoperekedwa. Ophunzira sayenera kuika nsinjiro za chiyankhulo mu chifupikitso.

**9.4.2.4 Gwo D: CHIMASULIRO (Malikisi 15)**

Ophunzira ayenera kumasulira nhani ya m'Chingerezi m'Chichewa chomveka bwino m'mipata yoperekedwa. Nkhani zoperekedwa zitha kukhala pa mitu monga iyi:

- a. zachilengedwe
- b. ngozi zachilengedwe
- c. mtendere
- d. kusintha kwa nyengo
- e. nkhanza kwa ana
- f. uchembere wabwino
- g. maluso amakono

**9.4.3 Paper III: Nkhani Za Mchezo ndi Zolembedwa (Malikisi 70)**

Pepalali lili ndi magawo awiri: Gwo A ndi B.

**9.4.3.1 Gwo A: NDAKATULO NDI NKHANI ZAZIFUPI (Malikisi 30)**

Gawoli lili ndi mafunso awiri omwe ophunzira ayenera kuyankha kuchokera pa ndakatulo ndi nhani yaifupi yoperekedwa. Ndakatulo ndi nhani zitha kuchokera m'mabuku osiyanasiyana. Funso lililonse lili ndi malikisi 15. Mu ndakatulo, mafunso atha kukhala :

- a. a tanthauzo la ndakatulo
- b. a kufunika kwa ndakatulo
- c. a mitundu ya ndakatulo
- d. a zipangizo zopezeka m'ndakakatulo
- e. a kamvekedwe ka ndakatulo
- f. a oyankhula ndi oyankhulidwa
- g. a mfundo zikuluzikulu (maphunziro opežeka m'ndakatulo)

Mu nkhani zazifupi, mafunso atha kukhala :

- a. a tsatanetsatane wa nkhani
- b. a apangankhani
- c. a mfundo zikuluzikulu (maphunziro opežeka m'nkhanj yoperekedwa)
- d. a malo ndi nthawi
- e. a pampondachimera
- f. a nsetso
- g. mphendero

Ophunzira ayenera kuyankha mafunso onse m'mipata yoperekedwa.

#### **9.4.3.2 Gawo B: NKHANI YITALI NDI MASEWERO A ZISUDZO (Malikisi 40)**

M'gawoli mafunso amachokera m'mabuku awiri operekedwa monga: *Nthondo* ndi *Chamdothe ndi Zisudzo Zina*. Buku limodzi limakhala la nkhani yitali ndipo lina limakhala la zisudzo. Mabukuwa amasinta pakapita nthawi.

Mafunso anayi amaperekedwa ndipo ophunzira ayenéra kusankha ndi kuyankha mafunso awiri okha, funso limodzi pa buku lililonse. Ophunzira ayenera kuyankha mafunso a m'gawoli mosotokoza. Ophunzira ayenera kufotokozena mfundo zinayi pa funso lililonse m'masamba oyankhirapo operekedwa. Malikisi pa funso lililonse loyankhidwa ndi 20.

Mafunso a munkhani yitali atha kuchokera ku:

- a. tsatanetsatane wa nkhani
- b. apangankhani
- c. mfundo zazikulu / maphunziro
- d. malo ndi nthawi
- e. nsetso
- f. mphendero

Mafunso a masewero a zisudzo atha kuchokera ku:

- a. tanthauzo
- b. atengambali
- c. kusiyanitsa masewero a zisudzo ndi nkhani zina
- d. kufunika kwa zisudzo
- e. mitundu ndi magawo a zisudzo

- f. zipangizo za m'zisudzo
- g. kayankhulidwe ka m'zisudzo

### **9.5 MUYESO WA KAKHOZEDWE PA MAYESO A CHICHEWA CHA MSCE**

<b>GRADE</b>	<b>MUYESO WA KAKHOZEDWE</b>
<b>PASS</b>	<ul style="list-style-type: none"> <li>a. athe kusiyanitsa pakati pa kalata yamchezo ndi yantchito</li> <li>b. athe kulemba molondola makeyala a kalata yantchito ndi yamchezo</li> <li>c. athe kulemba mfundo zochepa m'chimangirizo / kalata ngakhale muli zolakwika zina za malamulo a chiyankhulo</li> <li>d. athe kulemba malonje molondola</li> <li>e. athe kulemba zizindikiro za m'kalembedwe zosavuta</li> <li>f. athe kuzindikira mtundu wa malonje</li> <li>g. athe kuyankha mafunso ophweka ndi ena ofunsa za mitundu ya mawu</li> <li>h. athe kuyesera kulemba chifupikitso pa nkhanzi yoperekedwa</li> <li>i. athe kuyesera kulemba chimasuliro kuchokera ku nkhanzi ya m'Chingerezi kupita m'Chicewa ngakhale chimasulirocho chili ndi zolakwika zambiri za malamulo a chiyankhulo ndi kalembedwe ka ziganizo</li> <li>j. athe kukumbukira ndi kuzindikira komwe kukuchitikira nkhanzi/ apangankhani</li> <li>k. athe kuyankha mafunso ophweka mu nkhanzi ndi ndakatulo</li> <li>l. athe kupereka mfundo zosachepera ziwiri ngakhale angalephere kutambasula mfundozo</li> <li>m. athe kuyesera kufotokoza mifindo ngakhale atalakwitsa kutsata malamulo a chiyankhulo</li> </ul>
<b>CREDIT</b>	<p>Asonyeze maluso a pa PASS ndi otsatirawa:</p> <ul style="list-style-type: none"> <li>a. athe kupereka mfundo zokwanira ndi zitsanzo zoyenera</li> <li>b. athe kufotokoza mfundo ndi zolakwika zochepa</li> <li>c. athe kusonyeza kuganiza mozama m'zolemba zawo</li> <li>d. athe kulemba mfundo mwadongosolo / mwandondomeko</li> <li>e. athe kugwiritsa ntchito zizindikiro za m'kalembedwe molondola</li> <li>f. athe kuyankha mafunso ophweka ndi ena ofunsa za mitundu ya mawu molondola</li> <li>g. athe kuzindikira mfundo yaikulu mu nkhanzi yoperekedwa</li> <li>h. athe kuzukuta mawu ofanana ndi otsutsana m'matanthauzo kuchokera mu nkhanzi yoperekedwa</li> <li>i. athe kuzukuta ndi kufupiktsa nkhanzi mosavutikira</li> <li>j. athe kumasulira nkhanzi yoperekedwa ngakhale muli zolakwika zochepa za malamulo a chiyankhulo</li> <li>k. athe kuyankha mafunso ophweka popanda vuto lililonse</li> <li>l. athe kuyankha mafunso okhwima</li> <li>m. athe kukumbukira, kuzindikira komwe nkhanzi ikuchitikira ndi mawu ozukutira nkhanzi ndi ndakatulo</li> <li>n. athe kupereka mfundo zokwanira ndi kuzifotokoza movutikira pang'ono</li> </ul>
<b>DISTINCTION</b>	<p>Asonyeze maluso a pa CREDIT ndi otsatirawa:</p> <ul style="list-style-type: none"> <li>a. athe kupereka mfundo zoyenera ndi zitsanzo zake ndi kuzitambasula bwino</li> <li>b. athe kufotokoza mfundo m'Chicewa chomveka bwino</li> <li>c. athe kupereka mfundo m'ndondomeko yoyenera</li> <li>d. athe kugwiritsa ntchito nsinjiro za chiyankhulo mosavutikira</li> <li>e. athe kutsatira malamulo a chiyankhulo ndi kalembedwe ka mawu kokhoza</li> </ul>

- |  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>f. athe kusonyeza m'zolemba zawo kuganiza ndi kuzukuta mozama</li> <li>g. athe kugwiritsa ntchito zizindikiro za m'kalembedwe moyenera</li> <li>h. athe kuyankha mafunso ophweka ndi ovuta moyenera</li> <li>i. athe kuzindikira mawu ofanana ndi otsutsana m'matanthauzo m'nkhani yoperekedwa</li> <li>j. athe kuzukuta ndi kulemba chifupikitso cha nkhani yoperekedwa mokhoza kwambiri</li> <li>k. athe kumasulira nkhani kuchokera m'Chingerezi kupita m'Chichewa mosavutikira</li> <li>l. athe kupeza apangankhani, komwe nkhani ikuchitikira, kamvekedwe ka ndakatulo, mfundo zikuluzikulu komanso màwu ozukutira ndakatulo ndi nkhani zazifupi</li> <li>m. athe kusonyeza polemba luso loganiza ndi kuzukuta mozama</li> <li>n. athe kupereka mfundo ndi zitsanzo zomveka bwino ndi kuzifotokozerwa momveka bwino</li> </ul> |
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## **9.6 MABUKU**

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## **10.0 MSCE CLOTHING AND TEXTILES EXAMINATION SYLLABUS**

### **10.1 INTRODUCTION**

The Clothing and Textiles MSCE examination syllabus takes emphasis on the application of mathematical, scientific, artistic, technological, cultural and research skills to production, use and care of textile products. Clothing and Textiles MSCE examination syllabus is designed to equip candidates with knowledge, skills and attitudes to address the challenges and promote creativity, entrepreneurship and self reliance. This shall lead to improved standard of living for the individual, family and community thereby contributing to national development.

### **10.2 AIMS OF THE SYLLABUS**

The aims of the examination syllabus have been drawn from the core elements and rationale for Clothing and Textiles as stipulated in the teaching syllabus for MSCE Clothing and Textiles. The syllabus shall therefore enable candidates to:

- a. demonstrate the appropriate knowledge and skills in the choice, use and care of sewing and knitting equipment
- b. demonstrate an understanding of fibres and fabrics in terms of their types, performance characteristics, choice, care, and effects on human beings and the environment
- c. design and construct garments and other textile products, comprehend their performance characteristics, handling processes and appreciating fashion
- d. demonstrate an understanding of the principles and elements of design in garment construction , grooming, arts and crafts and interior design for various occasions
- e. apply scientific, technological and entrepreneurship knowledge and skills in the use, care and maintenance of textile products
- f. demonstrate knowledge and skills in consumer education and apply entrepreneurship skills in the production and merchandise of garments and other textile products

### **10.3 ASSESSMENT OBJECTIVES**

#### **10.3.1 Core Element: Sewing and Knitting Equipment**

##### **10.3.1.1 Topic: Sewing Machines**

In this topic, candidates should be able to:

- a. describe portable lock stitch and industrial machines
- b. analyse different types of machines based on their functions
- c. use sewing machines based on their functions

##### **10.3.1.2 Topic: Knitting machines**

In this topic, candidates should be able to describe types of knitting machines.

**10.3.2 Core Element: Fibres and Fabrics**

**10.3.2.1 Topic: Fibres and fabrics**

In this topic, candidates should be able to:

- a. differentiate characteristics of different types of fabrics
- b. describe performance characteristics of fabrics
- c. explain factors affecting the performance of fabrics
- d. explain legal issues in clothing and other textile products
- e. analyse the effects of fabrication process and textile products on human beings and the environment
- f. create designs on fabrics through printing and dyeing techniques

**10.3.2.2 Topic: Fabric finishing techniques**

In this topic, candidates should be able to:

- a. describe fabric finishing techniques
- b. discuss methods of dyeing fabric
- c. print fabrics by using different methods

**10.3.2.3 Topic: Embroidery stitches**

In this topic, candidates should be able to:

- a. list different types of embroidery stitches
- b. draw different types of embroidery stitches
- c. produce a textile article involving at least five embroidery stitches

**10.3.3 Core Element: Design and construction of garments and other textile products**

**10.3.3.1 Topic: Design and construction of garments: blouse, shirt, dress**

In this topic, candidates should be able to:

- a. state guidelines for selection of fabrics
- b. design patterns using personal body measurements and commercially made patterns
- c. prepare the following:
  - i. a guide sheet for garment construction
  - ii. fabrics for garment construction.
- d. design patterns for chosen garments
- e. construct a garment of their choice

**10.3.4 Core Element: Principles and elements of design**

**10.3.4.1 Topic: Principles and elements of design**

In this topic, candidates should be able to:

- a. define the term '*design*' in garment construction
- b. list sources of design

- c. distinguish between principles and elements of design
- d. explain the relationship between the elements and principles of design
- e. discuss the effects of principles and elements of design on grooming
- f. apply the principles and elements of design to grooming

#### **10.3.4.2 Topic: Interior design**

In this topic, candidates should be able to:

- a. define the term '*interior design*'
- b. list materials used for interior design
- c. discuss room decoration accessories
- d. discuss factors which affect choice of accessories for decorating rooms

#### **10.3.4.3 Topic: Fashion**

In this topic, candidates should be able to:

- a. define the term '*fashion* in clothing and textiles'
- b. list factors which affect fashion selection
- c. describe the following:
  - i. factors which affect fashion selection
  - ii. factors which influence changes in fashion
  - iii. the fashion cycle
- d. discuss characteristics of fashion

### **10.3.5 Core Element: Maintenance of Clothing and Textile products**

#### **10.3.5.1 Topic: Maintenance of Clothing and Textile products**

In this topic, candidates should be able to:

- a. list the following:
  - i. laundry materials for clothing and textile products
  - ii. methods of mending clothing and textile products
- b. describe the following:
  - i. types of stains in clothing and textiles
  - ii. guidelines and principles for stain removal on clothing and textile products
  - iii. methods of mending clothing and textile products
- c. conduct experiments on laundry materials used in clothing and textiles
- d. use the right procedure to remove stains on clothing and textile products
- e. mend clothing and textile products

#### **10.3.5.2 Topic: Laundry**

In this topic, candidates should be able to:

- a. describe stages in laundry processes
- b. explain the following:
  - i. the importance of each step in the laundry process
  - ii. methods of washing fabrics
- c. analyse the properties of cotton, nylon, wool and polyester fabrics in relation to laundry process

- d. analyse garment and textile care labels
- e. use the right procedure for laundry
- f. conduct experiments on the effects of water, heat and bleaches on cotton, nylon, wool and polyester fabrics

### **10.3.6 Core Element: Consumerism and Entrepreneurship**

#### **10.3.6.1 Topic: Consumerism**

In this topic, candidates should be able to:

- a. state problems affecting the consumer in clothing and textiles
- b. discuss problems affecting the consumer in clothing and textiles
- c. describe the following:
  - i. factors that influence consumer behaviour in clothing and textiles
  - ii. basic concepts in consumer education in clothing and textiles
  - iii. rights of the consumer in clothing and textiles
- d. explain responsibilities of the consumer in clothing and textiles

#### **10.3.6.2 Topic: Entrepreneurship**

In this topic, candidates should be able to:

- a. define the term '*entrepreneurship*' in clothing and textiles
- b. interpret information on textile product **labels**
- c. analyse entrepreneurship skills in clothing and textiles
- d. discuss steps in developing a small scale business in clothing and textiles

#### **10.3.6.3 Topic: Market research**

In this topic, candidates should be able to:

- a. define the meaning of the term *market research*
- b. describe the importance of marketing in entrepreneurship
- c. discuss the effect of market research on demand and supply in clothing and textile
- d. discuss the importance of marketing in clothing and textile entrepreneurship
- e. plan a small scale clothing and textile business

#### **10.3.6.4 Topic: Business plan**

In this topic, candidates should be able to:

- a. list financing institutions for small businesses in clothing and textiles
- b. describe components of a business plan in clothing and textiles
- c. explain factors that facilitate clothing and textiles business growth
- d. analyse the competitive strengths of small clothing and textiles businesses

### **10.4 ASSESSMENT FORMAT**

The examination shall consist of three papers and these shall be examined as follows:

#### **10.4.1 Paper I (Theory)**

- a. The paper shall have sections **A** and **B**.

- b. All questions in Section A shall be compulsory.
- c. Section A shall consist of several free constructed response questions covering a cross section of the syllabus.
- d. Section A shall be worth **60** marks. Each question, however, should carry a unifying theme.
- e. Section B shall consist of three questions which shall carry **20** marks each.
- f. Candidates shall be required to answer two out of the three questions giving a total of **40** marks.
- g. Candidates shall answer questions on the spaces provided on the question paper.
- h. Duration of the paper shall be  $2\frac{1}{2}$  hours.

**NOTE:** The questions in Paper I shall be set in such a way that they test the candidates' ability to recall and apply knowledge, solve problem, and show creativity in Clothing and Textiles.

#### **10.4.2 Paper II (Practical)**

- a. The paper shall have one question to be carried out in two sessions namely cutting out and practical sewing sessions.
- b. In the practical sewing session, candidates shall construct part or a whole garment/article including a variety of sewing processes.
- c. The paper is worth **55** marks split into **15** marks for cutting out and **40** marks for practical sewing sessions.
- d. Marks for practical sewing session shall include mark allocation for the proper use of the sewing machine during practical examination.
- e. Duration for the cutting out session is **45** minutes followed by practical sewing session of  $2\frac{1}{2}$  hours.

#### **10.4.3 Paper III (Coursework)**

Course work shall demand candidates to produce a personal garment, textile article, child's cardigan and a file. The breakdown of marks shall be as follows:

<b><u>ITEM</u></b>	<b><u>MARKS</u></b>
Personal Garment	20
Textile Article	10
Child's Cardigan	7
File	8
<b>TOTAL</b>	<b><u>45</u></b>

**NOTE:** A subject teacher in each centre should sign a declaration form to certify that the Coursework has been done by the candidate.

#### **10.4.4 The weighting of the papers**

MSCE Clothing and Textiles Examination Paper shall be as follows:

	<b>MARKS</b>	<b>TIME</b>
<b>Paper I – (Theory)</b>	100	2 ½ hours
<b>Paper II – (Practical)</b>		
Cutting –out Session	15	
Practical Sewing Session	40	2 ½ hours
<b>Paper III – (Coursework)</b>	45	

#### **10.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
Candidates should be able to demonstrate the following abilities 1. Recalling information 2. Partial organisational skills 3. Partially making accurate observations 4. Partial analytical skills 5. Describe processes correctly 6. Partial ability in visual presentation of information 7. Partial ability in garment construction skills	Candidates should show all skills under pass and in addition, the following skills should be observed: 1. Good organisational skills 2. Good analysis of given information 3. Partial drawing skills 4. Ability to synthesise information 5. Good judgemental skills 6. Draw correct conclusion from experiments 7. Good ability in visual presentation of information 8. Good garment/article construction skills 9. Good ability to use equipment correctly 10. Ability to apply information to different situations	Candidates should show all skills under credit and in addition, the following skills should be observed: 1. Excellent organisational skills 2. Excellent analytical and interpretive skills 3. Excellent ability to synthesise information 4. Excellent judgemental skills 5. Excellent ability in visual presentation of information 6. Excellent garment/article construction skills 7. Excellent ability to use equipment correctly

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## **11.0 COMPUTER STUDIES MSCE EXAMINATION SYLLABUS**

### **11.1 INTRODUCTION**

Computer Studies MSCE examination syllabus is intended to enhance candidates' ability to appreciate and resolve real life problems related to computer technology. It is designed to enable students acquire skills for intellectual growth, personal enhancement as well as contribute towards the socio-economic development of the country. It is specifically developed to enable efficient assessment of students at national level in areas such as communication and information management, information processing, data storage, data analysis and presentation.

### **11.2 AIMS OF THE SYLLABUS**

The aims of this syllabus have been drawn from the core elements for Computer Studies as stipulated in the teaching syllabus for MSCE Computer Studies .The examination syllabus shall therefore enable candidates to:

1. demonstrate the ability to use software in information processing, analysis management and presentation
2. apply knowledge and skills of networking and communication technologies in their daily lives
3. demonstrate an understanding of software installation and solve software and hardware problems
4. apply basic programming principles to solve problems

### **11.3 ASSESSMENT OBJECTIVES**

#### **11.3.1 Core Element: Application Software**

##### **11.3.1.1 Topic: Spreadsheets:**

In this topic candidates should be able to:

- a. define 'spreadsheets' and 'worksheets'
- b. describe types, features and benefits of spreadsheets
- c. differentiate types of cell references (relative, mixed and absolute cell references)
- d. create a worksheet and workbook ( save, open, close, enter data)
- e. edit, sort, filter, format, protect worksheets and workbooks
- f. use shortcuts, commands, cell references, freeze panes, basic formulae, built-in functions (e.g SUM, AVERAGE, MIN, MAX, COUNT, IF), hide and unhide columns in a worksheet
- g. create charts and graphs (line, bar, pie, column) in a worksheet
- h. format charts and graphs (by inserting chart titles, axis titles, labels, data tables and legends) and set up a page for printing (selecting print area, printing margins, header, footer, page orientation and titles to print)

### **11.3.1.2 Topic: Desktop Publishing**

In this topic candidates should be able to:

- a. state examples of desktop publishing software (Corel draw, Photoshop, publisher, page maker, quark express)
- b. describe common features and benefits of desktop publishing software
- c. create a publication (save, close, insert tables, objects and graphics)
- d. edit a publication and graphics (crop, resize, rotate, flip, move)
- e. print a publication

### **11.3.1.3 Topic: Databases**

In this topic candidates should be able to:

- a. state the following:
  - i. features and objects of databases
  - ii. steps in database design
- b. describe types and benefits of databases
- c. distinguish among the different database models
- d. design and create tables (setting primary and secondary keys, field properties and data types), queries, forms and reports
- e. edit tables, queries, forms and reports
- f. print tables, queries, forms and reports

## **11.3.2 Core Element: Personal Computer Management and Maintenance**

### **11.3.2.1 Topic: Software Installation**

In this topic candidates should be able to describe the following:

- a. installation of an operating system, device drivers , and application software (windows operating system, ubuntu, printer drivers, scanner drivers and USB drivers and MS office/open office)
- b. the procedure for upgrading an operating system, device drivers and application software

### **11.3.2.2. Topic: Troubleshooting**

In this topic candidates should be able to state the following:

- a. hardware problems, sources and solutions
- b. software problems, sources and solutions

## **11.3.3 Core Element: Communication Networks**

### **11.3.3.1 Topic: Introduction to Communication Technologies**

In this topic candidates should be able to:

- a. define 'communication', 'data communication' and 'telecommunication network'
- b. list network devices
- c. explain how data signals are transmitted (analogue, digital)

- d. discuss the evolution of development of communication technologies (telephone, cellular and internet)
- e. describe the following:
  - i. uses of networks
  - ii. elements of communication systems
  - iii. data transmission media (wired, wireless)
- f. differentiate parallel and serial data transmission techniques
- g. contrast among the different modes of transmission (simplex, half duplex full duplex)

#### **11.3.3.2. Topic: Introduction to computer networks**

In this topic, candidates should be able to:

- a. describe the following:
  - i. various types of computer networks
  - ii. different network topologies
  - iii. the OSI and TCP/IP reference models
  - iv. the addressing systems used in computer networks
- b. discuss the following:
  - i. network protocols at each layer of the reference models
  - ii. different methods of internet access
- c. compare the following:
  - i. classful and classless IP addressing
  - ii. IPv4 and IPv6 internet protocols

#### **11.3.3.3 Topic: Network Applications**

In this topic, candidates should be able to:

- a. list examples of distributed applications, websites, search engines and web browsers
- b. state the advantages and disadvantages of social networks
- c. describe how to use search engines, email and web browsers

#### **11.3.4 Core Element: Programming Techniques and Logical methods**

##### **11.3.4.1 Topic: Programming fundamentals**

In this topic candidates should be able to:

- a. define ‘computer programme’, ‘compiler’, ‘translator’ and ‘assembler’
- b. state the following:
  - i. examples of programming languages
  - ii. different data types and data variables that are used in a computer programme
- c. describe the following:
  - i. use of arithmetic operators (+ (plus), - (minus), // (forward slash, \* (multiplication) Boolean operators (arithmetic: Addition, Subtraction, Multiplication, Division, and, or, not) and comparison operators ( equal to, not equal to, less than, greater than) in programming
  - ii. generations of programming languages.
  - iii. process of developing a computer programme (constructing, compiling and running)
  - iv. how to design a programme that uses control structures

## **11.4 ASSESSMENT FORMAT**

The examination shall consist of two papers and these shall be examined as follows:

### **11.4.1 Paper I (Theory)**

The format of the paper shall be as follows:

- a. The paper shall have **two** sections **A** and **B**.
- b. All questions in both sections **A** and **B** shall be compulsory.
- c. Section **A** shall comprise of short answer questions and it shall have **six** questions worth **55** marks.
- d. Section **B** shall have **three** questions worth **45** marks.
- e. The paper shall have a total of **100** marks.
- f. Candidates shall answer questions on the spaces provided in the question paper.
- g. Duration of the paper shall be **2** hours.

### **11.4.2 Paper II (Practical)**

The paper shall have one section and it shall be as follows:

- a. The paper shall comprise of **three** practical questions which shall be compulsory to all candidates.
- b. **Two** questions shall have **20** marks each and **one** question shall have **10** marks giving a total of **50** marks.
- c. At the end of the examination candidates shall be expected to produce a hardcopy and a softcopy to be saved in a removable disk (flash or Compact Disc) which shall be submitted together with the hardcopy.
- d. Candidates shall have to answer questions using a computer.
- e. Duration of the paper shall be **2** hours **30** minutes.

**Note:** After saving the work in the removable disk candidates shall have to delete their work that they may have saved in a computer. Failure to follow this instruction may lead to other candidates copying the work and may lead to disqualification.

## **11.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
Candidates are able to demonstrate the following abilities:	Candidates show all skills under pass and in addition, the following skills:	Candidates show all skills under credit and in addition, the following skills
a. define terms b. partially describe features of software (spreadsheets, database, desktop publishing) c. state examples of different software	a. partially describe procedures in operating different software functions b. differentiate and compare features of software c. partially create worksheets/workbooks/publications/and tables d. fully describe types, features and benefits of software e. fully describe procedures for software installation and upgrading	a. calculate using shortcuts and formulae b. manipulate documents by editing and/ formatting c. fully create documents using different software d. fully describe procedures for operating different software functions/programmes

and programming languages d. print documents e. state basic computer problems and their solutions f. state advantages and disadvantages of social networks	f. outline development stages in communication technologies g. fully compare the different networks h. outline elements of communication systems i. analyse different data transmission techniques and modes of transmission j. compare various types of computer networks k. outline how to use search engines, email and web browsers l. outline the use of operators in programming, generations of programming languages and the process of developing computer programme	e. manipulate data using shortcuts, formulae and built-in functions f. fully describe network topologies and the addressing systems used in computer networks g. discuss network protocols at each layer of reference models h. describe how to design a programme that uses control structures
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## **12.0 MSCE CREATIVE ARTS EXAMINATION SYLLABUS**

### **12.1 INTRODUCTION**

This syllabus has been designed for students to appreciate and resolve real life problems in art and cultural heritage using the skills of creativity, designing, expression and communication which can be translated to tangible forms. Creative arts shall also provide the opportunity to train both students who would proceed to tertiary level and those who cannot make it. It shall enhance the holistic development of the psychomotor, cognitive and affective domains. These skills shall further be used in the field of entrepreneurship where self-reliance and national development are promoted.

### **12.2 AIMS OF THE SYLLABUS**

The aims of this syllabus have been drawn from the core elements and rationale for Creative arts as stipulated in the teaching syllabus for MSCE Creative arts. This syllabus therefore intends to:

1. Demonstrate creativity and resourcefulness through designing and production of artworks. (core element 1)
2. Show an understanding, analysis and interpretation of artworks designed and produced for various purposes. (core element 1)
3. Demonstrate knowledge and skills in expressing, communicating and exhibiting artworks. (core element 1 and 2)
4. Demonstrate entrepreneurship skills for self-reliance and national development. (core element 4)
5. Design artworks using various ways that conserve the environment. (core element 3)
6. Demonstrate skills and knowledge in designing artworks that provide awareness and education to the society on various cross cutting issues. (Core element 1 and 2)

### **12.3 ASSESSMENT OBJECTIVES**

#### **12.3.1 Core element: Creating, interpreting and presenting artworks**

##### **12.3.1.1 Topic: Design and lettering**

In this topic candidates should be able to:

- a. state the following:
  - i. different types and styles of writings found in the locality
  - ii. places to store finished products
  - iii. factors to consider when displaying artworks
- b. distinguish different types and styles of writings found in the locality
- c. identify different positions and actions for human figures
- d. explain the following:
  - i. displaying techniques for artworks
  - ii. factors to consider when storing artworks
- e. design posters, billboards and sign writings in colour
- f. draw the following:
  - i. various types of letters using freehand
  - ii. human figures in different positions and actions

- iii. animal figures in different positions and actions
- g. shade the following:
  - i. human figures in different positions and actions
  - ii. animal figures in different position and actions
- h. paint the following:
  - i. human figures in different positions and actions
  - ii. animal figures in different positions and actions

#### **12.3.1.2 Topic: Fabric printing**

In this topic candidates should be able to:

- a. state factors to consider when pricing and marketing finished fabrics
- b. describe factors to consider when carrying out market research for printed fabrics
- c. explain fabric printing techniques
- d. design the following:
  - i. patterns on lino, rubber, soft wood and potato
  - ii. different patterns for prints on fabric using paints or colours

#### **12.3.2 Core element: Entrepreneurship in creative arts**

##### **12.3.2.1 Topic: Tie and dye and batik**

In this topic candidates should be able to:

- a. define tie and dye and batik
- b. distinguish materials for producing tie and dye and batik artworks
- c. describe the process of making tie and dye
- d. design tie and dye and batik
- e. explain factors to consider when pricing and conducting a mock market for tie and batik

##### **12.3.2.2 Topic: Career opportunities in creative arts**

In this topic candidates should be able to:

- a. state factors to consider when displaying artworks
- b. explain factors to consider when storing artworks
- c. describe career opportunities in art industry
- d. explain types of art centres found in the localities
- e. design advertisements for artworks

#### **12.3.3 Core element: Expressing and communicating**

##### **12.3.3.1 Topic: Figures and portrait drawing**

In this topic candidates should be able to:

- a. explain the following:
  - i. principles of proportion in figures and portraits
  - ii. places to store finished artworks
- b. draw the following:
  - i. complete human figures
  - ii. portraits
- c. describe displaying techniques for figures and portraits

**12.3.3.2 Topic: Animal figures**

In this topic candidates should be able to:

- a. state factors to consider when storing artworks in animal figures
- b. explain principles of proportion in animal figures
- c. describe displaying techniques in animal figures
- d. draw animal figures

**12.3.3.3 Topic: Still life and nature**

In this topic candidates should be able to:

- a. state factors to consider when storing artworks in still life and nature
- b. describe the following
  - i. various forms of still life and nature
  - ii. displaying techniques in Still life and nature
- c. draw still life and nature artworks
- d. paint still life and nature artworks

**12.3.3.4 Topic: Design and lettering**

In this topic candidates should be able to:

- a. Write a stanza in freehand pen lettering
- b. State factors to consider when displaying artworks
- c. Explain factors to consider when storing artworks
- d. Design the following:
  - i. a book cover
  - ii. logos for various purposes
  - iii. various cards for various purposes
- e. Paint or colour a book cover
- f. Produce designs using a computer

**12.3.4 Core element: Environmental friendly art production practices**

**12.3.4.1 Topic: Conserving the environment**

In this topic candidates should be able to:

- a. state factors to consider when storing artworks that depict dangers of environmental degradation
- b. mention alternative resources for producing artworks in order to conserve the environment
- c. describe displaying techniques in artworks that depict dangers of environmental degradation
- d. explain the procedure to follow when establishing a woodlot for continued production of artwork
- e. design a poster that depicts dangers of environmental degradation

**12.3.4.2 Topic: Paper carving**

In this topic candidates should be able to:

- a. state factors to consider when displaying artworks
- b. describe the following:
  - i. the process for making paper pulp
  - ii. the process for making sawdust blocks
- c. explain the following:
  - i. techniques for making sawdust blocks
  - ii. factors to consider when storing artworks
- d. design various artworks using paper pulp blocks

**12.3.5 Core element: Entrepreneurship in creative arts**

**12.3.5.1 Topic: Clay modelling and pottery**

In this topic candidates should be able to:

- a. mention the following:
  - i. places where you can fetch clay for moulding artworks
  - ii. tools used for production of pottery/ clay artworks
- b. state factors to consider when storing clay artworks
- c. describe the following:
  - i. the procedure for processing clay to produce pottery/ clay artworks
  - ii. the importance of glazing clay artworks.
  - iii. displaying techniques in clay artworks
- d. explain the following:
  - i. moulding techniques for clay artworks
  - ii. factors to consider when pricing and marketing clay artworks
- e. distinguish methods of firing clay artwork

**12.3.5.2 Topic: Weaving and plaiting**

In this topic candidates should be able to:

- a. mention materials used for weaving and plaiting artworks
- b. distinguish between weaving and plaiting
- c. explain types of weaving
- d. describe the importance of dying materials for weaving and plaiting
- e. design a pattern for twill and check weave
- f. discuss factors to consider when carrying out a market research for woven and plaited items
- g. explain factors to consider when pricing and marketing woven and plaited items

**12.3.5.3 Topic: Craftwork in wood and stone**

- a. state factors to consider when displaying artworks
- b. explain qualities of wood suitable for carving
- c. describe qualities of stone suitable for carving
- d. design different objects for wood carving

- e. design different objects for stone carving
- f. explain factors to consider when storing artworks

### **12.3.6 Core element: Expressing and communicating**

#### **12.3.6.1 Topic: Perspective drawing**

In this topic candidates should be able to:

- a. state factors to consider when displaying artworks
- b. mention objects that depict perspective
- c. explain the following:
  - i. principles of perspective drawing
  - ii. factors to consider when storing artworks
- d. draw various objects that depict perspective
- e. paint various objects that depict perspective

#### **12.3.6.2 Topic: Landscape drawing**

In this topic candidates should be able to:

- a. draw various landscapes
- b. paint various landscapes
- c. design a landscape using computers
- d. state factors to consider when displaying artworks
- e. explain factors to consider when storing artworks

#### **12.3.6.3 Topic: Imaginative abstract and realistic compositions**

In this topic candidates should be able to:

- a. Define imaginative realistic compositions
- b. State factors to consider when displaying artworks
- c. Explain factors to consider when storing artworks
- d. Distinguish between realistic and abstract compositions
- e. Describe the characteristics of a cartoon
- f. Draw the following:
  - i. imaginative realistic art compositions
  - ii. imaginative abstract compositions
  - iii. cartoon compositions
- g. Paint the following:
  - i. realistic compositions
  - ii. imaginative abstract compositions
  - iii. cartoon compositions

### **12.4 ASSESSMENT FORMAT**

The examination shall have **two (2)** papers; Paper I and Paper II.

#### **12.4.1 Paper I**

- a. The paper shall have two sections (**A** and **B**).

- b. Section A shall comprise structured questions, while section B shall comprise practical questions
- c. Section A shall have **eight** questions worth **60** marks, while section B shall have **two** questions where a candidate is to choose only **one** question worth **40** marks giving a total of **100** marks.
- d. Time allowed for this paper shall be **2 hour**.

#### **12.4.2 Paper II**

- a. The paper shall have **two** sections.
- b. Section A shall have a compulsory question, while section B shall have **two** choice questions on practical work.
- c. Section A shall have **one** question worth **50** marks, while in section B each of the choice questions shall be worth **50** marks giving a total of **100** marks.
- d. Time allowed for this paper shall be **2 hours 30 minutes**.

#### **12.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Students should show the following skills:</p> <ul style="list-style-type: none"> <li>a. Define terms in creative arts.</li> <li>b. Name objects, materials and tools used for production of artworks.</li> <li>c. Mention alternative sources for producing artworks</li> <li>d. Identify different positions and actions for human, animal, still life and nature drawing</li> <li>e. State types, different styles, places and factors to consider when producing, storing, displaying and marketing artworks.</li> <li>f. Draw, shade and paint basic human and animal figures, still life and nature drawings in different positions satisfactorily.</li> <li>g. Write basic free hand pen lettering</li> <li>h. Design simple posters, cards, patterns, book covers and billboards satisfactorily.</li> <li>i. Design objects for wood and stone carving basically.</li> </ul>	<p>Students should show all the skills under <b>pass</b> and in addition, the following skills:</p> <ul style="list-style-type: none"> <li>a. Distinguish different types, styles, materials and forms of art.</li> <li>b. Explain factors, principles, techniques and procedures to follow in art and environmental protection.</li> <li>c. Draw, shade and paint human, animal figures, still life and nature drawings in different positions very well.</li> <li>d. Write artistically in free hand pen lettering very well.</li> <li>e. Design complex posters, book covers, logos cards patterns and billboards very well.</li> <li>f. Design different objects for wood and stone carving very well.</li> <li>g. Draw and paint portraits and landscapes with some degree of mastery using computers.</li> </ul>	<p>Students should show all skills under <b>credit</b> and in addition the following skills:</p> <ul style="list-style-type: none"> <li>a. Design posters, billboards and sign writings in colour excellently.</li> <li>b. Draw various types of letters using freehand</li> <li>c. Design different objects for wood and stone carving.</li> <li>d. Draw imaginative abstract and realistic compositions excellently;</li> <li>e. Draw and paint various landscapes and portraits using computers.</li> <li>f. Draw cartoon compositions excellently.</li> <li>g. Design and make various art works using pulp blocks very well.</li> </ul>

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## **13.0 MSCE ENGLISH EXAMINATION SYLLABUS**

### **13.1 INTRODUCTION**

The Malawi Schools Certificate of Education English examination syllabus is there to assist teachers and learners to prepare effectively for the national examinations. It's a tool which when used together with the teaching syllabus shall guide candidates on expectations of examiners as they approach the subject during national examinations.

### **13.2 AIMS OF THE SYLLABUS**

The English Examination Syllabus aims to:

- a. assess the level of the candidate's ability in English at the end of the secondary school course.
- b. assess the candidates' potential for further education

### **13.3 ASSESSMENT OBJECTIVES**

Candidates should be able to:

- a. demonstrate knowledge of English grammar, vocabulary and usage
- b. write continuous prose in certain conventional styles
- c. make their own notes from what they read
- d. demonstrate an understanding of a written passage
- e. demonstrate an understanding and appreciation of literature in relation to selected books

**NB: A pass in English is one of the conditions for the award a Malawi School Certificate of Education**

### **13.4 ASSESSMENT FORMAT**

The examination shall consist of Papers I, II and III as follows:

- a. Paper I: Grammar and Composition worth **70** marks for a duration of **1 hour 45 minutes**
- b. Paper II: Summary and Comprehension worth 60 marks for a duration of **1 hour 45 minutes**
- c. Paper III: Literature in English worth **70** marks for a duration of **2 hours**

### **13.5 DETAILS OF THE EXAMINATION PAPERS**

#### **13.5.1 Paper I: Grammar and Composition**

This paper shall have **two** sections, **A** and **B**, and is worth **70** marks. In Section **A**, candidates shall be required to answer **30** Multiple Choice questions based on grammar items, vocabulary and usage covered in the Senior Secondary Teaching Syllabus for English. Section **B** shall consist of **two Composition questions** from which candidates shall be required to answer **one**.

##### **13.5.1.1 Section A: Grammar (multiple choice) items**

Content and skills to be measured include:

- a. Prepositional structure
- b. Registers

- c. Verb tenses
- d. Conditional sentences
- e. Phrasal verbs
- f. Parts of speech
  - Nouns
  - Pronouns
  - Verbs
  - Adjectives
  - Adverbs
  - Prepositions
  - conjunctions
- g. Order of adjectives
- h. Subordinate clauses
- i. Phrase

#### **13.5.1.2      Section B: Composition**

Candidates shall be required to write **one** composition from any of the following composition types: letter (business/formal), speech, report and short story.

##### **a. Letter writing:**

Candidates shall be required to include the following aspects in their letter:

- i. Sender's address on the right hand side
- ii. A date below the address
- iii. Recipient's address on the left hand side (One line below the date on the left)
- iv. Salutation below the recipient's address
- v. Candidates can use either block address or indented address but not both.
- vi. Title
- vii. Introduction
- viii. Body
- ix. Ending/ valediction

**Candidates shall lose marks if they do the following:**

- i. Having one instead of two addresses.
- ii. Writing the date using dashes or slashes e.g. 20 – 06 – 2020 or 20/06/2020.
- iii. Writing wrong salutation e.g. Dear Sir/Madam instead of using one option.
- iv. Interchanging positions for the title and salutation.
- v. Writing one name instead of full names e.g. *Chisomo* instead of *Chisomo Chidothi*.

##### **b. Report writing:**

Candidates shall be required to include the following aspects in their report:

- i. Date e.g. 20th July, 2020.
- ii. Sender's name and address e.g.  
From: Pemphero Phiri, Chimutu Secondary School, Post Office Box 48,  
Lilongwe.
- iii. Recipient's title and address e.g.  
To: The Headmistress, Chimutu Secondary School, Post Office Box 48, Lilongwe.

- iv. Title
- v. Introduction
- vi. Body
- vii. Ending (candidates should include their signature and full name)

**Candidates shall lose marks if they do the following:**

- i. formatting the address as in business letter
- ii. writing the addresses without 'From' and 'To'
- iii. writing the date using dashes or slashes e.g. 20 – 06 – 2020 or 20/06/2020.
- iv. writing wrong ending e.g. "*Yours faithfully, Yours sincerely, Yours amicably*"

**c. Speech writing:**

Candidates shall be required to include the following aspects in their speech:

- i. Title
- ii. Introduction: candidates shall include a list of dignitaries in order of their seniority.
- iii. Body: candidates shall be speaking directly to an imaginary audience. They shall use signalling devices when introducing each point.
- iv. Conclusion: candidates shall repeat the list of dignitaries and show appreciation to the audience.

**Candidates shall lose marks if they do the following:**

- i. Writing the speech in narrative form.
- ii. Failing to include names of dignitaries.
- iii. Failing to repeat the list of dignitaries and showing appreciation to the audience.
- iv. Using wrong pronouns. e.g. *they*

**d. Short story Writing**

Candidates shall be required to write an original short story which has the following elements:

- i. Plot
- ii. Setting
- iii. Characters
- iv. Conflict
- v. Climax
- vi. Resolution
- vii. Theme

**Candidates shall lose marks if they do the following:**

- i. beginning the short story with phrases like *Once upon a time..., Long time ago...*
- ii. writing a flat short story or a narrative
- iii. writing a short story without a dialogue
- iv. writing a short story without clear characters
- v. writing a short story that is not in line with the given theme or topic.

**NB: For all types of compositions, candidates are required to observe the following:**

- i. meet the required number of words (350-500 words)

- ii. stick to the demands of the question
- iii. **not** use vernacular
- iv. properly punctuate their essays

### **13.5.2 Paper II: Summary and Comprehension**

This paper shall have **two** sections, **A** and **B**. In section **A**, candidates shall be required to summarise a passage in note-form (Note-making). Section **B** shall consist of a prose passage on which questions shall be asked to test candidates' ability in key areas.

#### **13.5.2.1 Section A: Note-making**

##### **Content and skills to be measured**

Candidates shall be provided with a passage from which they shall be required to summarise in note form. They shall be required to:

- i. Provide a suitable title in capital letters.
- ii. Give four main points (sub titles) in small letters, numbered and underlined.
- iii. Supply at least 16 supporting points, which should be numbered.

Candidates should use phrases in their notes, at least 3 conventional abbreviations or contractions and at least 3 symbols in the supporting points. Marks shall be awarded for content, note style and fair copy layout. Candidates who simply copy the passage shall be penalised.

**Note-Making Sample**  
*(Based on 2019 MSCE examination)*

#### **FACTORS LOWERING ONE'S SELF ESTEEM**

1. Lack of self confidence
  - a. Comes in one has no self-awareness
    - i.e. doesn't know his/her potentials
  - b. low achievement
    - e.g. can fail to do well in career, business etc.
  - c. great achievement bringing self confidence
    - i.e. becomes opposite when one has minimal strides in his/her ambitions
2. Peer pressure
  - a. influence from those one associates (with)
  - b. experienced by everyone regardless of age

#### **13.5.2.2 Section B: Comprehension (prose passage)**

Candidates shall be provided with a prose passage from which they shall be required to answer questions. Questions shall be asked to test candidates' ability in some or all of the following areas: understanding general points of content; making inferences from material in the passage, extracting information from the passage; and summarising points in the candidate's own words.

When answering the questions, candidates shall be required to observe the following:

- i. The tense of the response should reflect the tense of the question. For example, when the question is in the present tense, the response should also be in the present tense.
- ii. Candidates shall provide short answers in form of phrases or short sentences.
- iii. For a response that is transposed (lifted) from the passage, candidates shall lose half of the total marks for the question. All responses must be paraphrased.
- iv. For a question that requires a number as a response, candidates should write all numbers between 1 and 99 in words ; from 100 and above should be written either in words or as a figure.
- v. Candidates shall use correct punctuations and spellings.
- vi. For questions that require candidates to give word meanings, the corresponding response must be a word. The response must correspond with the word in tense and part of speech. Similarly, when candidates are asked to give the meaning of an expression, the corresponding response must be in phrase form.
- vii. For questions that require candidates to provide the title of the passage, the response should always be a phrase.
- viii. Candidates shall lose a maximum of one mark per question if they make technical errors (e.g. grammar, spellings, and punctuation).
- ix. For questions that require candidates to describe a character, the response should be an adjective and a justification from the passage.

The last question in this section requires candidates to summarise the comprehension passage in their own words, with a word limit of **70-100**. Candidates shall be required to:

- i. pick out main points from the passage which are relevant to the title.
- ii. choose a maximum of 6 main points from the ones picked out from the passage.
- iii. develop the 6 points into one paragraph by using conjunctions.
- iv. use either the present or past tense when developing the paragraph.

**Candidates shall lose marks if they do the following:**

- i. opening the paragraph with words like "Once upon a time....", and "Long time ago....."
- ii. using personal pronouns such as "I", "we", "me", "us" and adjectives such as "my" and "our".
- iii. writing the summary in note form by using hyphens, bullets, numbers etc.
- iv. transposing (lifting) the passage.
- v. introducing new characters in the passage.
- vi. using short version of a name like "Chisomo" becomes "Chiso".
- vii. overusing pronouns throughout the summary.
- viii. writing a summary of less than 70 words

### **13.5.3 Paper III: Literature in English**

This paper shall have **two** sections, **A** and **B**. Section **A** shall consist of **two** compulsory **contextual questions** and candidates shall be required to answer both questions. Section **B** shall comprise **four essay questions** based on **two** prescribed books, **one** Novel and **one** Play, **two** from each book. Candidates shall choose **one** question from a novel and another from the play.

### 13.5.3.1 Section A: Contextual questions

#### Content and skills to be measured

Candidates shall be required to answer **two compulsory contextual questions** based on a poem and a short story from **ANY** relevant source **not** prescribed in the Teaching Syllabus.

##### a. Poem

Candidates shall be required to answer questions from the following key areas:

- i. **Literary terms** (plot, personae, addressee, setting, point of view, mood, tone, poetic justice and theme)
- ii. **Literary devices** (simile, metaphor, personification, irony, symbol, stanza, alliteration, foreshadowing, consonance, assonance, rhymes, repetition, hyperbole, understatement, rhetorical questions, imagery, euphemism, innuendo, onomatopoeia, rhythm, apostrophe, antithesis, aphorism, allusion, aposiopesis and flashback).

#### Candidates shall lose marks if they do the following:

- i. failing to use adjectives when describing a character.
- ii. failing to provide evidence supporting a theme or character.
- iii. failing to identify any literary terms such as personae, setting etc.

##### b. Short story

Candidates shall be required to answer questions from the following key areas:

- i. **Literary terms** (plot, character, narrator, setting, point of view, mood, tone, poetic justice and theme)
- ii. **Literary devices** (simile, metaphor, personification, irony, symbol, foreshadowing, hyperbole, understatement, repetition, rhetorical questions, imagery, euphemism, innuendo, antithesis, allusion and flashback).

#### Candidates shall lose marks if they do the following:

- i. failing to use adjectives when describing a character.
- ii. failing to provide evidence supporting a theme or character.
- iii. failing to explain the plot.

### 13.5.3.2 Section B: Essay questions

Candidates shall be asked **four essay questions** based on **two** prescribed books, a Novel and a Play.

Candidates shall answer **one question** on each book. The following are the guidelines for essay writing:

- i. candidates shall be asked either multiple or loaded essay questions. **Multiple essay questions** have **two** parts and candidates shall be required to provide **4** points in **4** paragraphs for each part. In **loaded essay questions**, candidates shall be required to provide **8** points in **8** paragraphs.
- ii. candidates are expected to use an appropriate opening statement
- iii. candidates shall use signalling devices when introducing a point in a paragraph. For example, *Firstly, Secondly, Furthermore, In addition*, etc.
- iv. candidates shall consistently use either present tense or past tense in their essays
- v. candidate's shall support their response/arguments by drawing evidence from the book

**a. Novel (The Pearl)**

Candidates shall be required to answer questions from the following key areas:

- i. Character analysis
- ii. Theme
- iii. Plot
- iv. Literary devices

**b. Play (Macbeth)**

Candidates shall be required to answer questions from the following key areas:

- i. Character analysis
- ii. Theme
- iii. Plot
- iv. literary devices

**Candidates shall lose marks if they do the following in essay writing:**

- i. committing mechanical errors (e.g. wrong spellings, wrong subject- verb agreement, punctuations etc.)
- ii. giving responses without justification from the book.
- iii. writing the essay without paragraphs.
- iv. writing the essay which has less than 8 points.

**13.6 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<ol style="list-style-type: none"> <li>1. Recall of information on literary elements</li> <li>2. Partial understanding and use of grammar</li> <li>3. Partial understanding of guidelines in report, speech, short story/play or letter writing</li> <li>4. Basic logical flow of ideas or events in a story/play or letter or report</li> <li>5. Ability to isolate few points from the passage</li> <li>6. Ability to correctly respond to recall questions</li> </ol>
<b>CREDIT</b>	<p>Demonstration of all skills under <i>pass</i> and in addition, the following skills:</p> <ol style="list-style-type: none"> <li>1. Good layout of report, letter, speech or story/ play</li> <li>2. Good understanding and use of grammar</li> <li>3. Logical presentation of ideas*</li> <li>4. Ability to summarise</li> <li>5. Ability to raise and argue points in an essay</li> <li>6. Ability to come up with a suitable title and subtitles in note making</li> <li>7. Ability to correctly respond to recall and comprehension questions</li> <li>8. Ability to give meanings to some words and expressions.</li> </ol>
<b>DISTINCTION</b>	<p>Demonstration of all skills under <i>credit</i> and in addition, the following skills:</p> <ol style="list-style-type: none"> <li>1. Excellent content, layout and style in note making</li> <li>2. Very strong use of tenses and command./ of English language in report, letter, speech or story/play</li> <li>3. Strong ability to come up with the correct length of the report, letter, speech or story/play</li> <li>4. Excellent cohesion of ideas in essays</li> </ol>

	<ul style="list-style-type: none"><li>5. Appropriate use of vocabulary and register</li><li>6. Good punctuation and paragraphing</li><li>7. Strong ability to summarise and draw conclusions</li><li>8. Strong knowledge of literary elements</li><li>9. Exceptional ability to provide a balanced critical analysis of literary texts</li></ul>
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### **13.7 REFERENCES**

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- Steinbeck, J (1947). *The Pearl*. London: Longman/Pearson Education Africa.
- Shakespeare, W (2006). *Macbeth*. Cambridge: Cambridge University Press.
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## **14.0 LE SYLLABUS D'EXAMENS POUR LE FRANÇAIS**

### **NIVEAUX 3 ET 4**

#### **14.1 LES BUTS D'EVALUATION (AIMS OF ASSESSMENT)**

1. Evaluer le niveau d'apprentissage du Français atteint par le/la candidat(e) à la fin de ses études secondaires.
2. Evaluer la potentialité du/de la candidat(e) à poursuivre les études supérieures.

#### **14.2 LES OBJECTIFS D'EVALUATION (ASSESSMENT OBJECTIVES)**

Le/la candidat(e) doit être capable de:

1. Démontrer qu'il/elle comprend ce qui est dit dans différentes situations telles que les entretiens et interview et discours et interpréter le sens donné dans des telles situations.
2. S'exprimer d'une façon claire et concise avec une bonne prononciation et une intonation dans le quotidien et les événements divers.
3. Lire ou décrire et comprendre différents types de textes et images.
4. S'exprimer d'une façon claire et logique oralement et par écrire en faisant usage d'une grammaire, conjugaison et orthographe correcte.

#### **14.3 MODELE D'ÉVALUATION ( ASSESSMENT FORMAT)**

Il y aura trois différentes parties: (3 papers: I, II and III.)

##### **14.3.1 Paper I: Les examens oraux ( Oral/Aural examinations) - (60 marks)**

- La compréhension orale (Aural comprehension) – **30 minutes**
- La dictée (Dictation test) - **20 minutes**
- Les épreuves orales (Oral Test) - **15 minutes** au maximum pour chaque candidat(e)

##### **14.3.2 Paper II: La composition et la grammaire (Composition and Grammar) - 2 hours – (70 marks)**

- La conversation et la lettre ou la composition
- La grammaire

##### **14.3.3 Paper III: La compréhension et le résumé (Comprehension and summary) 1 hour 30 minutes – (40 marks)**

#### **14.4 LES DÉTAILS DE L'EVALUATION (DETAILS OF THE EXAMINATION)**

##### **14.4.1 Paper I : Les examens oraux ( Oral/Aural examinations)- 60 marks**

Cet examen comprend trois sections: La compréhension orale (Aural comprehension) et la dictée (dictation test) qui comptent dix points chacune et les épreuves orales qui comptent quarante points.

La compréhension orale a pour objectif de tester la capacité de comprendre ce qui est dit ou lu. Par contre, la dictée teste le niveau d'orthographe et ponctuation. Les épreuves orales exigent aux candidats de s'exprimer oralement sur des sujets donnés.

#### **14.4.1.1 Section 1 : La compréhension orale (Aural comprehension)**

##### **Le contenu à évaluer (content to be measured)**

Un texte sera lu aux candidats qui répondront en Français aux cinq questions distribuées sur les feuilles de papiers au début du test. Le texte sera lu deux fois avec un intervalle de trois minutes entre les deux lectures pour permettre aux candidats de noter quelques informations. Après la deuxième lecture, les candidats seront requis de répondre aux questions par écrit pendant cinq minutes. Les candidats sont permis d'utiliser les phrases courtes dans leurs réponses.

Cet examen compte dix points. Les cinq questions ont une valeur de deux points chacune. La durée de cet examen est de trente minutes. Les fautes d'orthographe ne sont pas pénalisées.

#### **14.4.1.2 Section 2 : La Dictée (Dictation test)**

Un simple texte de moins de cent mots, basé sur le vocabulaire et les structures du niveau secondaire. Ce texte sera lu aux candidats suivant une procédure en trois étapes: une première lecture à vitesse normale pour permettre aux candidats d'avoir une compréhension générale; une deuxième lecture, entre coupée en deux ou trois mots qui sont répétés une seul fois, pendant laquelle les candidats doivent écrire leur dictée. La ponctuation est donnée en Français. À la fin, une troisième lecture sera faite d'une façon normale pour permettre aux candidats de faire des corrections. Cinq minutes seront accordées aux candidats pour vérifier et corriger leur dictée.

Les fautes d'orthographies sont pénalisées en raison d'un demi-point ( $\frac{1}{2}$  mark) pour chaque faute. Mais les fautes de ponctuations et d'accents sont sanctionnées en raison d'un quart ( $\frac{1}{4}$  mark). Un total de vingt fautes équivaut à un zéro point (0/10) pour l'ensemble de la dictée. Cet examen compte dix points et dure vingt minutes.

**NOTES :** Un enregistrement sur la compréhension orale et la dictée sera préparé à l'avance par Maneb pour permettre aux examinateurs de pratiquer leur lecture en présence d'un surveillant. Cet enregistrement sera disponible une heure avant le début de ces examens. (Il faut éviter à tout prix d'utiliser cet enregistrement pendant ces examens au moment de la lecture.)

##### **Les épreuves orales (Oral tests)**

Les épreuves orales sont sous-divisées en quatre parties:

- la lecture du texte (Reading test)
- les questions de la compréhension du texte (questions on passage read)
- les questions sur les images (Questions on Picture Series)
- la conversation générale (General conversation).

#### **14.4.1.3 Section 3a: La lecture du texte (Reading Passage)**

Le/la candidat(e) est invité(e) à lire un simple texte. La meilleure lecture est appréciée ou jugée sur la base de la prononciation, intonation, l'aisance dans la langue et le flot naturel de parole. La note maximale est 10 pour ce test.

**14.4.1.4 Section 3b: Les questions de compréhension du texte (Questions on passage read)**

Cinq questions sont préformées imprimées par Manebet posées par l'examinateur en référence au texte lu dans la première partie mentionnée ci-haut. Le/la candidat(e) est libre de se référer au texte de lecture pour répondre à chacune des questions. Les réponses courtes sont acceptées aussi longtemps qu'elles sont correctes. Chaque question compte deux points et la note finale est dix.

**14.4.1.5 Section 3c: Les questions sur les images (Questions on Picture Series)**

Cet examen est sous formé d'histoire en quatre images que le/la candidat(e) devra décrire en répondant aux cinq questions préformées, imprimées par Maneb et posées par l'examinateur. Les questions sont basées sur ces mêmes images. La réponse correcte devrait décrire l'image dans une phrase en français. L'usage de la langue locale ou encore une autre langue francisée sera pénalisé.

La réponse à la dernière question ( 5 ) devra soit résumer l'histoire en une ou deux phrases soit raconter la même histoire en reliant les images d'une façon appropriée avec les connecteurs tels que d'abord, et puis, ensuite, après, enfin, finalement, parce que, pour que, cependant, mais , alors que, en premier lieu, donc, de plus, aussi, de même, par contre, c'est pourquoi, ainsi, en conséquence, pour, de sorte que, toutefois, c'est-à- dire, car, par ailleurs, encore, pourtant, etc. Chaque question compte deux points et la note finale est dix.

**14.4.1.6 Section 3d: La conversation générale (General conversation)**

Un échange entre le/la candidat(e) et l'examinateur/ examinatrice sur un sujet donné. La conversation qui est initiée par l'examinateur/ examinatrice est basée sur un sujet de caractère généralisé à la vie, l'expérience et la connaissance du candidat/de la candidate.

Les sujets de conversation pourraient se baser sur les informations personnelles, le milieu familial, l'école, l'éducation, les aspirations futures, le temps, le loisir, le voyage, les vacances, le logement, le coût de vie, les relations sociales, la santé, les achats, le milieu urbain et/ou rural, la nourriture et/ou les boissons, les services sociaux, le climat et tout autre simple sujet pouvant émaner de l'examinateur ou des réponses du candidat ou de la candidate dans les limites prescrites par le syllabus d'apprentissage.

Le/la candidat(e) doit être en mesure de tenir cette conversation en démontrant une aptitude à comprendre et répondre par des phrases logiques, cohérentes et compréhensibles. Les questions sur l'âge, le lieu d'habitation, le loisir, le sport, les aspirations futures devront révéler une spontanéité dans les réponses du/de la candidat(e).

L'examinateur/l'examinatrice devra poser des questions invitant les candidat(e)s à s'exprimer avec des phrases non pas un seul mot du genre 'oui', 'non' ou 'peut-être'.

Le nombre de questions pourront se limiter à cinq, mais si un(e) candidat(e) veut étendre la conversation un peu plus, la conversation devra être encouragé(e) dans la limite du temps prescrit pour les épreuves orales. Un(e) candidat(e) idéal(e) pourrait facilement poser des questions à l'examinateur/examinatrice plutôt que de se limiter à répondre aux questions posées. Cette épreuve compte 10 points.

**NB.**

Toutes les quatre dernières épreuves dureront au maximum 15 minutes pour chaque candidat(e) y compris le temps de préparation qui ne doit pas dépasser 5 minutes.

**14.4.2 Paper II : La composition et la grammaire (composition and grammar) -2 hours  
(70 marks)**

Cet examen comprend deux sections: la composition et la grammaire. La durée est de deux heures et la note est soixante-dix. La composition comprend la conversation, la lettre et la composition elle-même.

**14.4.2.1 Section A. La composition (40 points)**

Cette section a deux parties : une conversation qui est obligatoire et la lettre ou la composition. Le /la candidat(e) doit choisir entre la lettre et la composition. Le nombre de mots doit être de **120 à 150** mots.

**a. La conversation (20 points)**

La conversation est écrite en forme de dialogue imaginaire basé sur un thème ou sujet tiré du syllabus. Cette partie d'examen est obligatoire pour tous les candidats.

**b. La lettre(20 points)**

La lettre est écrite en forme de lettre amicale ou officielle. Le choix de types de lettre dépendra de la question dans le sujet donné. Cette partie d'examen est au choix, le candidat /la candidate devra choisir entre la lettre et la composition.

**c. La composition (20 points)**

La composition est écrite en forme d'un essai descriptif ou narratif selon le sujet donné. Les sujets de cet examen sont basés sur les thèmes ou sujets du syllabus d'enseignement.

**NOTES**

- Ces écrits doivent se conformer au nombre de mots requis (120-150). Les écrits de moins de 120 mots seront pénalisés en raison de cinq mots pour un point de moins sur la note finale (20).
- Les fautes de grammaire, d'orthographe, de conjugaison, d'accents et des ponctuations seront pénalisées.
- Le contenu des compositions (conversation, lettre ou composition) doit se conformer aux sujets donnés dans la question.

La logique et la cohérence dans la langue doivent aussi se conformer aux sujets donnés.

**14.4.2.2 Section B : La grammaire**

Cette section contient dix questions de structures grammaticales avec trois sous-questions à répondre sur la base d'un exemple donné. Ces exemples touchent plusieurs parties de la grammaire,

notamment; la négation, les prépositions, les nationalités, les conjonctions, les adjectifs, les adverbes, l'heure, la conjugaison et les temps de verbes, les noms, les pronoms, les articles, les dates, l'hypothèse, les chiffres et nombres, les comparatifs, superlatifs, les interrogatifs, la voix passive, les participes présents, les subjonctifs, les discours direct et indirect, le complément direct/le complément indirect.

Les questions de grammaire prennent différentes formes telles que; la transformation et les questions à trous suivant un modèle donné. Les **A,B,C** ne sont pas des choix multiples.

Les fautes de grammaire, de conjugaison et d'orthographe sont pénalisées en raison d'un demi-point ( $\frac{1}{2}$  mark) ou d'un quart de point ( $\frac{1}{4}$  mark) de moins selon le niveau de transformation requise dans la réponse à donner.

#### **14.4.3 Paper III: La compréhension et le résumé (Comprehension and summary) 1 hour 30 minutes – 40 marks**

Cet examen comprend deux sections; la compréhension écrite et le résumé du texte.

##### **14.4.3.1 Section A : La compréhension du texte**

Un texte de compréhension en français suivi de dix questions en français comptant chacune deux points. Ce test demande aux candidat(e)s de s'exprimer dans un contexte approprié en usant correctement la langue, les temps de verbes, l'orthographe et la grammaire. Les fautes de grammaire, d'orthographe, de conjugaison et de vocabulaire seront pénalisées en soustrayant un point à la question concernée.

##### **14.4.3.2 Section B : Le résumé du texte**

Cette partie de la question demande aux candidat(e)s de faire un résumé du texte de compréhension en utilisant leurs propres mots. Ces mots doivent être au minimum 70 et au maximum 100. Les candidats doivent éviter de transposer ou copier textuellement les mots ou les phrases de texte dans leur résumé. Les fautes de grammaire, d'orthographe, de conjugaison et de vocabulaire seront pénalisées en raison d'un demi-point ( $\frac{1}{2}$  mark) pour chaque faute. Mais des fautes des ponctuations et d'accents sont sanctionnées en raison d'un quart ( $\frac{1}{4}$  mark). Un total de dix fautes équivaut un zéro point sur cinq (0/5).

Les candidats doivent donner au moins six différents points de repère ayant une valeur numérique de deux points chacun.

La logique et la cohérence des idées donneront droit à trois points sur le total de vingt points. A ce propos l'usage de connecteurs est important. (Op.cit. Connecteurs dans la compréhension des images)

## 14.5 LES NIVEAUX DE COMPETENCES EN MSCE (PERFORMANCE GRADE DESCRIPTORS)

PASS	CREDIT	DISTINCTION
Rappel d'informations	Démontrer les compétences du niveau “pass” et aussi les compétences suivantes:	Démontrer les compétences du niveau “credit” et aussi les qualités suivantes:
1. capable de lire avec beaucoup de difficulté. 2. Capable de répondre aux questions exigeant un rappel d'informations 3. Capable d'écrire une dictée contenant beaucoup de fautes 4. Capable de transposer ou copier les mots nécessaires dans le texte. 5. A peine capable de tenir une conversation 6. A peine capable d'écrire une composition avec beaucoup de fautes 7. capable de faire la description mais de manière disjointe 8. A peine capable de répondre aux questions sur la grammaire. 9. A peine capable de faire un résumé d'un texte / d'une image.	1. Capable d'écrire une dictée contenant moins de fautes 2. Capable de décrire les images avec un assez bon vocabulaire 3. Capable de faire une composition légèrement cohérente 4. Capable de répondre aux questions avec moins de fautes 5. Capable d'utiliser les connecteurs 6. Capable de lire correctement un bon nombre de mots 7. Capable d'utiliser correctement des mots, des temps de verbes, des vocabulaires et orthographé avec moins de fautes 8. Capable de faire une description avec peu de fautes 9. Capable de tenir une conversation en faisant de moindres hésitations	1. Capable de répondre aux questions du niveau avancé 2. Capable de s'exprimer dans une lettre / composition utilisant une bonne grammaire et un bon vocabulaire 3. Capable de construire les phrases correctes 4. Capables d'utiliser correctement les temps de verbes, le vocabulaire et l'orthographe des mots. 5. Faire usage de la cohérence et la logique dans diverse productions 6. Capable de faire usage de la bonne ponctuation et de bons paragraphes 7. Capable de lire avec une bonne prononciation et intonation. 8. Capable de tenir une conversation en répondant avec une aisance 9. Capable de faire correctement un résumé d'un texte ou des images dans une forme logique

## 14.6 MANUELS APPROUVÉS (CORE TEXTBOOKS)

Bourdais, D. et al. (2004). *Equipe*. Oxford : Oxford University Press.

Dubois, J. et Lagane, R. (2001). *La Nouvelle Grammaire du Français*. Paris : Larousse.

Fleet, S. (2001). *Cahier d'Exercice*. Oxford : Heinemann Education Publishers.

Green, J. (1999). *Métro 1: Cahier d'Exercice*. Heinemann Education Publishers.

Hamel, P. (1998). *Porte Ouverte*. Dublin : Mentor Publications.

Honor, S. et Mascle-Taylor, H. (2000). *Encore Tricolore Nouvelle Edition*. United Kingdom: Nelson Thornes.

- Malawi Institute of Education. (2013). *Le syllabus pour le français, troisième et quatrième niveau.* Domasi : MIE.
- McNab, R. (2000). *Métro 1.* Pearson Education Limited.
- McNab, R. (2000). *Métro 2.* Pearson Education Limited.
- McNab, R., Beckett , G. et Bell, C. (2009). *Edexcel GCSE French Metrotoutain Foundation.* Pearson Education Africa.
- McNab, R., Beckett, G. et Bell, C. (2009). *Edexcel GCSE French Metrotoutain Higher.* Pearson Education Africa.
- McNab, R., Beckett, G. et Bell, C. (2009). *Edexcel GCSE French Metrotoutain Foundation. Teacher's Guide.* Pearson Education Africa.
- McNab, R., Beckett, G. et Bell, C. (2009). *Edexcel GCSE French Metrotoutain Higher. Teacher's Guide.* Pearson Education Africa.
- Shihemi, J. et Odhiambo, J. (2006). *Peak Revision KCSE French.* Nairobi: East African Educational Publishers and Grey Matter Ltd.

## **15.0 MSCE GEOGRAPHY EXAMINATIONS SYLLABUS**

### **15.1 INTRODUCTION**

Geography a natural and social science is a subject aimed at enhancing understanding of the planet we live in, internal and external forces that shape it. It is therefore through its study that students appreciate the distribution of the physical environment, human activities and mechanisms that can be put in place to ensure sustainable natural resources utilization. It's a subject that channels candidates to profitable career paths in natural and social sciences.

The Malawi Schools Certificate of Education Geography examination syllabus is there to assist teachers and learners to prepare effectively for the national examinations. It's a tool which when used together with the teaching syllabus shall guide candidates on expectations of examiners as they approach the subject.

### **15.2 AIMS OF THE SYLLABUS**

The syllabus aims at enabling candidates to:

- a. to enhance skills of map reading, interpretation drawing and transformation
- b. to develop knowledge and understanding of the planet earth and its realms
- c. to develop an appreciation and value to environmental resources and consequently conserve it
- d. to appreciate the spatial interdependence of societies at all levels and aspects
- e. to develop understanding of spatial distribution of economic and social activities and their effect on population and the environment

### **15.3 ASSESSMENT OBJECTIVES**

Candidates should be able to

- a. show understanding of map work and interpretation of geographical information systems
- b. demonstrate understanding of the lithosphere, hydrosphere atmosphere and biosphere
- c. demonstrate understanding of the importance of the environment and sustainable natural resource management
- d. demonstrate knowledge and understanding of spatial distribution of economic activities
- e. demonstrate understanding of the interdependence between countries in environmental economic social and technological aspects for sustainable development

#### **15.3.1 Core element: Map reading and interpretation of geographical information**

##### **15.3.1.1 Topic: Land uses**

In this topic candidates should be able to:

- a. identify land uses on topographical maps
- b. interpret map symbols on topographical maps in relation to land uses
- c. explain factors affecting land uses in relation to topography

**15.3.1.2 Topic: Land forms**

In this topic candidates should be able to:

- a. define the term landforms
- b. identify landforms on topographical maps (plateaus, conical hills, saddle, pass, gap, valleys, spur and cliffs)
- c. describe landforms on topographical maps
- d. draw cross-sections of relief features
- e. determine intervisibility between points on a map

**15.3.1.3 Topic: Map work**

In this topic candidates should be able to:

- a. locate features on a topographic map (landforms, human, riverine and coastal)
- b. describe features on a topographic map (landforms, human, riverine and coastal)
- c. measure distance between points on a map
- d. calculate the following:
  - i. area of regular and irregular features on a map
  - ii. gradient of given points on a map
- e. draw cross sections of river profiles as shown on a map
- f. interpret results of gradient calculation
- g. reduce and enlarge maps

**15.3.1.4 Topic: Statistical methods**

In this topic candidates should be able to:

- a. define the term data
- b. identify ways of collecting geographical data
- c. describe ways of collecting geographical data
- d. design data collection tools

**15.3.2 Core element: Understanding the earth.**

**15.3.2.1 Topic: Riverine landforms**

In this topic candidates should be able to:

- a. define the terms riverine landforms
- b. identifying riverine landforms ( source, confluence, waterfalls, rapids, gorges, meander, ox- bow lake, levees, delta and flood plains)
- c. explain the following:
  - i. the formation of riverine landforms
  - ii. the importance of riverine landforms

**15.3.2.2 Topic: Coastal landforms**

In this topic candidates should be able to:

- a. define the term coastal landforms
- b. describing coastal landforms (headlands, capes, bay, spit, lagoon, peninsula, gulf, strait, estuary, cliff and isthmus )
- c. explain the following:
  - i. the formation of coastal landforms
  - ii. the importance of coastal landforms

**15.3.2.3 Topic: Theory of continental drift**

In this topic candidates should be able to:

- a. defining terms (theory, continental drift,)
- b. explain the following:
  - i. the continental drift theory
  - ii. the evidence supporting the continental drift theory
- c. examine the theory of continental drift

**15.3.2.4 Topic: Theory of plate tectonics**

In this topic candidates should be able to:

- a. defining terms (plate, tectonic movement)
- b. identify types of crustal plates on the map
- c. explain the following:
  - i. theory of plate tectonics
  - ii. causes of plate tectonics
  - iii. types of plate boundaries and features associated
  - iv. effects of geological features on the environment and human activities
- d. relate plate tectonics and continental drift theory

**15.3.2.5 Topic: Mountain building processes**

In this topic candidates should be able to:

- a. define the terms folding and faulting
- b. describe features formed from faulting and folding
- c. analyse effects of mountain building processes
- d. relate mountain building processes to plate tectonics

**15.3.2.6 Topic: Volcanism**

In this topic candidates should be able to:

- a. define term volcanism
- b. describe the formation of a volcano
- c. explain the following:
  - i. stages in a volcanoes life cycle
  - ii. formation of intrusive volcanic features (dykes, sills, laccoliths and batholiths) and extrusive volcanic features ( lava plateaus and plains, craters, calderas, geysers, hot springs, fumaroles and volcanic islands)
  - iii. relationship between volcanism and mountain building processes
  - iv. effects of volcanism
  - v. disaster risk management and skills to be applied in areas vulnerable to volcanism

**15.3.2.7 Topic: Earthquakes**

In this topic candidates should be able to:

- a. define the term earthquake
- b. explain the following:
  - i. causes of earthquakes
  - ii. the process of measuring and detecting earthquakes
  - iii. the relationship between earthquakes volcanoes and fold mountains
- c. analyse the effects of earthquakes
- d. locating zones of earthquake occurrence

**15.3.2.8 Topic: Rocks**

In this topic candidates should be able to:

- a. define the term rocks
- b. describe the following:
  - i. main types of rocks
  - ii. characteristics of each type of rocks
- c. explain the following:
  - i. formation of different types of rocks
  - ii. relationship between different types of rocks
  - iii. importance of rocks to human activities
- d. draw the rock cycle

**15.3.2.9 Topic: Relief features of ocean basins**

In this topic candidates should be able to:

- a. describe the ocean basin
- b. identify relief features of the ocean basin on the map (oceanic basin, continental shelf, slope, abyssal plain, oceanic ridges, ridges, trenches,)
- c. draw the relief features of the oceanic basin

**15.3.2.10 Topic: Ocean currents**

In this topic candidates should be able to:

- a. identify the types of ocean currents
- b. explain the following:
  - i. terms ocean currents drift and streams
  - ii. causes of ocean currents
  - iii. factors influencing direction of ocean currents
- c. locate ocean currents of the world (warm. Gulf Stream, North Atlantic Drift, Brazilian, Mozambique, Kurosiwo and East Australian. Cold: Benguela, Canaries, Labrador, Peru, Kamchatka ,California, west Australian)
- d. examine the effects of ocean currents

**15.3.2.11 Topic: World fishing**

In this topic candidates should be able to:

- a. identify the following:
  - i. main species caught in the major fishing grounds of the world
  - ii. other resources from the sea
- b. explain the following:
  - i. factors influencing the development of the fishing industry
  - ii. factors influencing location of the major fishing grounds
  - iii. main methods used in world fishing
  - iv. importance of the fishing industry
  - v. challenges faced in the major fishing grounds

- vi. solutions to the challenges faced in the fishing grounds
- vii. social and economic importance of resources from the sea

**15.3.2.12 Topic: World pressure belts**

In this topic candidates should be able to:

- a. define the term air pressure
- b. explain the following:
  - i. factors influencing air pressure
  - ii. the ITCZ and its influence on weather patterns
- c. locate the major air pressure belts of the world
- d. account for the different air pressure belts of the world

**15.3.2.13 Topic: Prevailing winds**

In this topic candidates should be able to:

- a. define the term prevailing winds
- b. explain the following:
  - i. how pressure belts influence prevailing winds
  - ii. how Ferrell's Law of motion affects prevailing winds
  - iii. different types of prevailing winds
- c. locate prevailing winds on the world map
- d. plot isobars on a pressure map
- e. interpret isobars and wind pattern on isobaric maps

**15.3.2.14 Topic: Local winds**

In this topic candidates should be able to:

- a. define the term local winds
- b. distinguish prevailing winds from local winds
- c. describe the characteristics of local winds
- d. explain the following:
  - i. occurrence of local winds
  - ii. occurrence of land and sea breeze
  - iii. influence of land and sea breezes on local weather
- e. locate global local winds (Chiperoni, Harmattan, Fohn, Chinook)

**15.3.2.15 Topic: Air masses**

In this topic candidates should be able to:

- a. define the term air masses
- b. explain the following:
  - i. main types of air masses (cold and warm)
  - ii. weather associated with different air masses
- c. classify air masses

**15.3.2.16 Topic: Fronts**

In this topic candidates should be able to:

- a. define the term fronts
- b. describe the following:
  - i. different types of fronts (with aid of diagrams)
  - ii. characteristics of different types of fronts
  - iii. the type of weather associated with each type fronts
- c. explain the formation of fronts
- d. locating different fronts on world map

**15.3.2.16 Topic: Cyclones and anticyclones**

In this topic candidates should be able to:

- a. define cyclones and anticyclones
- b. identify different types of cyclones
- c. describe the following:
  - i. development of different types of cyclones
  - ii. weather associated with tropical and temperate cyclone
- d. locate cyclones on the world map
- e. compare the weather patterns associated with tropical and temperate cyclones

**15.3.2.17 Topic: Clouds**

In this topic candidates should be able to:

- a. define the term clouds
- b. describe the weather patterns associated with various types of clouds explain how clouds are formed
- c. identify various types of clouds
- d. classify clouds

**15.3.2.18 Topic: Precipitation and Rainfall**

In this topic candidates should be able to:

- a. identify areas in the world receiving different types of rainfall
- b. explain the formation of different types of rainfall
- c. account for the rainfall patterns in different parts of the world
- d. interpret rainfall data from different sources

**15.3.2.19 Topic: Climatic regions and world vegetation biomes**

In this topic candidates should be able to:

- a. define the term climatic region
- b. identify climatic regions (Equatorial, Tropical Continental, Desert, Mediterranean )
- c. explain the following:
  - i. characteristics of climate and associated vegetation
  - ii. influence of climate and vegetation on human activities

**15.3.3 Core element: Environment and natural resources management**

**15.3.3.1 Topic: Environmental issues**

In this topic candidates should be able to:

- a. define the following terms
  - i. environmental issues
  - ii. pollution
- b. identify different types of pollution
- c. explain the following:
  - i. causes and effects of different types of pollution
  - ii. ways of controlling pollution

**15.3.3.2 Topic: Desertification**

In this topic candidates should be able to:

- a. define the term desertification
- b. explain the following:
  - i. causes of desertification
  - ii. ways of controlling desertification
- c. describe the process of desertification
- d. examine the effects of desertification

**15.3.3.4 Topic: Climate change**

In this topic candidates should be able to:

- a. define the term climate change
- b. explain the following:
  - i. causes and effects of climate change
  - ii. difference between climate change mitigation and adaptation
  - iii. climate change mitigation and adaptation measures
  - iv. national and international responses to climate change
- c. analyse benefits and challenges of climate change interventions

**15.3.3.5 Topic: Wetlands in Malawi**

In this topic candidates should be able to:

- a. locate wetlands on the map of Malawi
- b. describe human activities that threaten wetlands
- c. explain the following:
  - i. the importance of wetlands
  - ii. strategies of managing wetlands

**15.3.3.6 Topic: Wildlife in Malawi**

In this topic candidates should be able to:

- a. locate wildlife reserves on the map of Malawi

- b. describe human activities endangering wildlife
- c. explain the following:
  - i. the importance of wildlife in Malawi
  - ii. conservation measures of wildlife in Malawi

#### **15.3.3.7 Topic: Waste management**

In this topic candidates should be able to explain the following:

- a. different types of waste
- b. effects of poor waste disposal
- c. ways of managing different types of waste
- d. strategies of waste management

#### **15.3.3.8 Topic: Minerals**

In this topic candidates should be able to:

- a. explain the uses of minerals (coal and gold)
- b. describe the following:
  - i. major mining methods (open cast, shaft, alluvial, adit)
  - ii. effects of mining

#### **15.3.3.9 Topic: Uranium**

In this topic candidates should be able to:

- a. locate places where uranium is found in Malawi
- b. identify the countries where uranium from Malawi is exported
- c. describe the process of mining and processing uranium
- d. explain the following:
  - i. occurrence of uranium
  - ii. the importance of uranium
  - iii. effects of uranium mining in Malawi

#### **15.3.3.10 Topic: Petroleum**

In this topic candidates should be able to:

- a. define the term petroleum
- b. identify uses of petroleum products
- c. locate areas with petroleum deposits on the world map
- d. describe the formation, occurrence, extraction, refining and transportation of petroleum
- e. explain the following:
  - i. role of OPEC
  - ii. environmental impact of petroleum drilling, refining and transportation

#### **15.3.3.10 Topic: Energy**

In this topic candidates should be able to:

- a. define the term energy

- b. describe the following:
  - i. types of energy
  - ii. how the different types of energy are generated (solar, wind, thermal, geothermal, biomass)
  - iii. the importance of energy
- c. explain the following:
  - i. advantages and disadvantages of each form of energy
  - ii. environmental impact of each form of energy
  - iii. the energy crisis

#### **15.3.4 Core element: Spatial organisation**

##### **15.3.4.1 Topic: Population distribution**

In this topic candidates should be able to:

- a. identify areas of low, medium and high population density
- b. calculate population density for various countries
- c. account for the world's population distribution

##### **15.3.4.2 Topic: Population growth**

In this topic candidates should be able to:

- a. explain the following:
  - i. causes of population growth
  - ii. effects of rapid population growth
  - iii. benefits of controlling population growth
- b. describe strategies for controlling population growth

##### **15.3.4.3 Topic: Population structure**

In this topic candidates should be able to:

- a. explain the population structure of a given population
- b. draw age sex pyramids (population pyramids)
- c. compare the population structures for developing and developed countries
- d. examine the implications of various population structures

##### **15.3.4.4 Topic: Demographic transition model**

In this topic candidates should be able to analyse the demographic transition model.

##### **15.3.4.5 Topic: Settlements**

In this topic candidates should be able to:

- a. identify the types of settlements
- b. examine different settlement patterns ( linear, nuclear, dispersed)
- c. explain the factors which influence the development of different settlement patterns

**15.3.4.6 Topic: Urbanisation**

In this topic candidates should be able to:

- a. define the term urbanisation
- b. explain the following:
  - i. Concentric zonal model
  - ii. factors influencing urbanisation
  - iii. solutions to the challenges associated with urbanisation
- c. assess the effects of urbanisation
- d. relate the concept of urbanisation to Lilongwe city ( functional zones, growth, challenges and solutions)

**15.3.4.7 Topic: World distribution of farming activities**

In this topic candidates should be able to:

- a. explain the following:
  - i. farming as a system
  - ii. factors that influence agriculture ( physical, economic, human and technological)
  - iii. types of agriculture
- b. locate on the world map the different farming systems
- c. differentiate between intensive and extensive farming ( crop and animal)
- d. assess the value of intensive farming

**15.3.4.8 Topic: Intensive rice farming in South East Asia**

In this topic candidates should be able to:

- a. identify the countries where rice is grown
- b. explain conditions favouring rice farming in S.E Asia
- c. relating farming activities to the cycle of seasons in S.E. Asia
- d. assess the value of intensive rice farming in S.E. Asia

**15.3.4.9 Topic: Intensive animal farming in Denmark**

In this topic candidates should be able to:

- a. locate dairy farming areas on the world map
- b. identify breeds of cattle raised on dairy farms in Denmark
- c. explain the following:
  - i. factors favouring dairy farming in Denmark
  - ii. the role of cooperatives on dairy farming in Denmark
  - iii. the importance of dairy farming to the economy of Denmark
- d. relate the cycle of seasons to farming activities on dairy farms

**15.3.4.10 Topic: Irrigation farming**

In this topic candidates should be able to:

- a. identify the following:
  - i. areas on the world map where irrigation is practiced

- ii. areas where irrigation is practiced in Malawi
- b. describe the modern methods of irrigation (overhead, drip and furrow)
- c. explain the following:
  - i. challenges associated with irrigation farming
  - ii. factors which encourage irrigation farming
  - iii. problems facing irrigation farming in Malawi
  - iv. how irrigation can be improved in Malawi

#### **15.3.4.11 Topic: Irrigation in Israel**

In this topic candidates should be able to:

- a. locate Israel on the world map
- b. explain the following:
  - i. factors that influence irrigation farming in Israel
  - ii. methods of irrigation used in Israel in relation to relief and climate
  - iii. challenges encountered in sourcing irrigation water in Israel
- c. describe the sources, treatment and distribution of irrigation water in Israel
- d. compare crops grown under irrigation in Malawi and Israel

#### **15.3.4.12 Topic: Plantation farming**

In this topic candidates should be able to:

- a. define plantation farming
- b. identify areas where plantation farming is practiced and crops grown
- c. explain the characteristics of plantation farming
- d. assess the value of plantation farming

#### **3.1.13 Topic: Tea plantation in Malawi**

In this topic candidates should be able to:

- a. locate tea growing areas on the map of Malawi
- b. explain conditions favourable for tea growing in Malawi
- c. explain the cycle of farming activities in tea farming
- d. describe the stages in the processing of tea
- e. explain the importance of the tea industry to the economy of Malawi

#### **15.3.4.14 Topic: Industrialisation**

In this topic candidates should be able to:

- a. define the term industrialisation
- b. explain the advantages and disadvantages of industrialisation

#### **15.3.4.15 Topic: Industries**

In this topic candidates should be able to:

- a. explain the following:
  - i. types of industries

- ii. an industry as a system
- b. locate the major industrialised areas of the world
- c. account for the distribution of the major industrial areas the world

#### **15.3.4.16 Topic: Motor vehicle industry in Japan**

In this topic candidates should be able to:

- a. locate the major industrial areas of Japan
- b. explain the following:
  - i. factors for the growth of the motor vehicle industry in Japan
  - ii. advantages and disadvantages of automation in motor vehicle production
  - iii. the significance of the motor vehicle industry in Japan

#### **15.3.4.17 Topic: Tourism in Africa**

In this topic candidates should be able to:

- a. define eco tourism
- b. locate major tourist centres in Africa
- c. explain the factors promoting tourism in Africa
- d. identify eco tourism centres in Africa
- e. assess the impact of tourism in Africa
- f. assess the importance of eco tourism

### **15.3.5 Core element: Interdependence between Malawi and the world**

#### **15.3.5.1 Topic: Regional and international trade blocks**

In this topic candidates should be able to:

- a. define the term trade blocks
- b. identify regional and world trade blocks ( SADC, COMESA, WTO, EAC)
- c. explain the following:
  - i. aims of different regional and international trade blocks
  - ii. benefits and challenges of trade agreements
- d. examine the roles of customs in international trade

#### **15.3.5.2 Topic: World transport routes**

In this topic candidates should be able to:

- a. identify the following:
  - i. major sea and air routes
  - ii. major railway lines in Africa and reasons for their distribution
- b. explain the following:
  - i. advantages and disadvantages of different systems of transport (land, air and water)
  - ii. the importance of the major sea and air routes
- c. describe the challenges faced by land locked countries

## 15.4 ASSESSMENT FORMAT

There shall be **two** papers as follows:

### 15.4.1 Paper I: Physical Geography

- a. **Five** free response questions
- b. Each question carries **25** marks
- c. Paper is divided into **two** sections, **A** and **B**.
- d. Section **A** comprises of **three** compulsory questions drawn from map reading and physical geography content respectively. Candidates shall answer all questions.
- e. Section **B** comprises of **two** choice questions drawn from physical geography content. Candidates shall answer **one** question only.
- f. Time allowed is **2 hours 30 minutes**
- g. Items shall vary in levels of difficulty

### 15.4.2 Paper II: Human Geography

- a. **Five** free response questions.
- b. Each question carries **25** marks.
- c. Paper is divided into **two** sections, **A** and **B**.
- d. Section **A** comprises of **three** compulsory questions drawn from human geography content. Candidates shall answer **all** questions.
- e. Section **B** comprises of **two** choice questions drawn from human geography content. Candidates shall answer **one** question only.
- f. Time allowed is **2 hours**
- g. Items shall vary in levels of difficulty
- h. Total marks is **100**

## 15.5 PERFORMANCE GRADE DESCRIPTORS

The following are competencies expected in geography for the award of a pass, credit or distinction.

PASS	CREDIT	DISTINCTION
<p>1. Knowledge of geographical concepts and display of map reading skills e.g.</p> <ul style="list-style-type: none"> <li>a. interpret map symbols, relief features, land uses and drainage.</li> <li>b. locate features on a map,</li> <li>c. measure distance</li> </ul> <p>2. Knowledge of features and processes that shape the earth's surface, the physical environment and their influence on human activities</p> <p>3. Display understanding of sustainable resources utilization</p> <p>4. Knowledge of geographical influence on local and global distribution of</p>	<p>In addition to the skills for a PASS, the candidate should also display the following competences:</p> <ul style="list-style-type: none"> <li>1. interpretation of maps and geographical systems through calculating areas, bearing and gradient.</li> <li>2. Ability to create new maps and plot information</li> <li>3. Knowledge of challenges that exist</li> </ul>	<p>In addition to the skills for a CREDIT, the candidate should also display the following competences:</p> <ul style="list-style-type: none"> <li>1. Ability to draw cross-section and convert scales</li> <li>2. Apply knowledge in addressing environmental problems, predict weather occurrences and their influence on human activities</li> <li>3. Address environmental and social problems resulting</li> </ul>

<p>economic and social activities.</p> <p>5. Knowledge of interdependence between countries in environmental, economic, social and technological aspects for sustainable development</p>	<p>due to local and global relationships</p> <p>4. Analysis of information</p> <p>5. Creativity in presenting graphical information.</p> <p>6. Ability to draw and label diagrams.</p>	<p>from disparities in distribution of economic and social activities</p> <p>4. Explore ways of addressing challenges that exist due to global linkage and interdependence</p> <p>5. Comprehensive analysis of information (figures, graphs)</p> <p>6. Logical presentation of facts.</p>
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## **16.0 MSCE HISTORY EXAMINATION SYLLABUS**

### **16.1 INTRODUCTION**

History is social science discipline aimed at enhancing understanding of the world we live in. as a subject it explores the events that have shaped our world. It is channels learners into developing a sense of patriotism and ability to understand global events. Learners also learn to co-exist and think critically which helps them to resolve conflicts

The Malawi Schools Certificate of Education History examination syllabus is there to assist teachers and learners to prepare effectively for the national examinations. It's a tool which when used together with the teaching syllabus shall guide candidates on expectations of examiners as they approach the subject during national examinations.

### **16.2 AIMS OF THE SYLLABUS**

The syllabus aims at enabling candidates to:

- a. demonstrate local, regional and international understanding
- b. demonstrate an understanding and appreciation of issues of human rights, democracy, gender, governance and other emerging issues
- c. apply indigenous and non-indigenous knowledge and skills necessary for lifelong learning, personal advancement, employment and development of society
- d. demonstrate an understanding of issues of nationalism and patriotism
- e. promote important skills such as critical thinking, problem solving, decision-making and communication

### **16.3 ASSESSMENT OBJECTIVES**

Candidates should be able to:

- a. explain the circumstances that led to the coming of immigrants into Central Africa from the 19<sup>th</sup> and early 20<sup>th</sup> centuries and their impact on the local inhabitants
- b. demonstrate an understanding of social, economic and political developments in Central Africa, from the pre-colonial period to independence
- c. describe the major events that took place in Europe before, during and after First World War
- d. demonstrate an understanding of the Second World and its aftermath
- e. describe the political, social and economic developments that took place in Africa from independence to the year 2000

#### **16.3.1 Core Element: Interrelationships Among The Individual, Family And Society (The 19<sup>th</sup> and early 20<sup>th</sup> Century immigrants into Central Africa)**

##### **16.3.1.1 The Yao and the Lomwe**

Candidates should be able to:

- a. trace the migratory routes of the various Yao and the Lomwe groups from their homeland to their final destination
- b. give reasons for Yao and Lomwe migration

- c. explain factors that influenced the Yao and Lomwe settlement choices in Malawi
- d. describe the socio-political organisation of the Yao and the Lomwe
- e. assess the impact of the Yao and Lomwe on the local inhabitants

#### **16.3.1.2 The Jere and Maseko Ngoni**

Candidates should be able to

- a. trace the migratory routes of the Jere and Maseko from their homeland to their final destination
- b. give reasons for the migration of the Jere and Maseko Ngoni
- c. explain the following:
  - i. factors that influenced the Jere and Maseko Ngoni settlement choices in Central Africa
  - ii. the impact of the Jere and Maseko Ngoni on local inhabitants
- d. describe the socio-political organisation of the Jere and Maseko Ngoni

#### **16.3.1.3 The Ndebele**

Candidates should be able to:

- a. trace the migratory routes of the Ndebele from their home to their final destination
- b. give reasons for the migration of the Ndebele
- c. explain the following:
  - i. factors that influenced the Ndebele settlement choices in Central Africa
  - ii. the impact of the Ndebele on local inhabitants
- d. describe the socio-political organisation of the Ndebele

### **16.3.2 Core Element: Economic And Social Issues In History**

#### **16.3.2.1 Growth of trade in Pre-colonial East and Central Africa (Portuguese factor)**

Candidates should be able to:

- a. give factors for the decline of the Portuguese influence in Central Africa
- b. describe the following:
  - i. how the Portuguese came into contact with the land of Zanj
  - ii. the motives of the Portuguese in Central Africa
  - iii. the organisation of the gold trade
- c. explain the following:
  - i. causes and results of the Arab-Portuguese conflict in the land of Zanj
  - ii. the impact of gold trade on Central Africa

#### **16.3.2.2 Ivory and Slave Trade**

Candidates should be able to:

- a. describe the organisation of the Ivory and Slave trade
- b. locate Ivory and Slave trade routes on a map of East and Central Africa
- c. explain the impact of the Ivory and Slave trade on indigenous people

**16.3.3 Core Element: Interdependence Between Malawi And The World (The Missionary factor in Malawi)**

**16.3.3.1 Islam**

Candidates should be able to:

- a. locate on a map of Malawi areas where Islam spread
- b. give reasons for the rapid spread of Islam among the Yao
- c. explain the following:
  - i. roles played by various groups in the spread of Islam
  - ii. the impact of Islam on the peoples' way of life in Malawi

**16.3.3.2 Christianity**

Candidates should be able to:

- a. give objectives of Dr David Livingstone's work
- b. describe early Christian churches in Malawi
- c. explain the following:
  - i. strategies used by Dr David Livingstone to open up Central Africa to missionary work
  - ii. problems encountered by the early missionaries
  - iii. the impact of the early missionary work in Malawi

**16.3.4 Core Element: Patriotism And Nationalism (European occupation and administration of central Africa)**

**16.3.4.1 Southern Rhodesia**

Candidates should be able to:

- a. locate Southern Rhodesia on a map of central Africa
- b. describe the role of the British South African company in the occupation of Southern Rhodesia i.e. signing of the Moffat treaty and Rudd concession
- c. explain the following:
  - i. factors that led to the British interests in Southern Rhodesia
  - ii. causes and results of the Ndebele war of 1893
  - iii. causes and results of the Shona-Ndebele war of 1896-97
- d. assess the impact of the British South African company administrative policies on land, labour and taxation on the local population

**16.3.4.2 Northern Rhodesia**

Candidates should be able to:

- a. locate Northern Rhodesia on a map of British central Africa
- b. describe the following:
  - i. the role of the British South African company in the occupation of Southern Rhodesia i.e. signing treaties such Ware concession, Lochner treaty, Lawley treaty and Victoria Falls treaties and occupation of North-western Rhodesia

- ii. the role of different personalities such as Alfred Sharpe and Sir Harry Johnston in British occupation of North Eastern Rhodesia
- iii. the British South African company administrative policies on land, labour and taxation up to 1924

#### **16.3.4.3 Nyasaland**

Candidates should be able to

- a. explain the following:
  - i. factors that led to the British, German and Portuguese interests in Nyasaland
  - ii. causes and results of the Chilembwe uprising of 1915
- b. describe the following:
  - i. the process of British occupation of Nyasaland
  - ii. the colonial administrative policies of Nyasaland on land, labour and taxation
- c. analyse the significance of the Chilembwe uprising

#### **16.3.5 Core Element: Leadership Styles In History**

##### **16.3.5.1 Economic developments in central Africa: from the colonial period to independence**

- Candidates should be able to:
- a. explain the relationship among the land, labour and taxation policies
- b. describe the development of the mining industry in central Africa i.e. copper mining in Northern Rhodesia and gold mining in Southern Rhodesia
- c. compare colonial government policies on plantation and peasant agriculture
- d. analyse the impact of the mining industry in central Africa
- e. assess the impact of labour migration on Nyasaland

##### **16.3.5.2 Political developments in central Africa from colonial period to independence (The central African Federation)**

Candidates should be able to:

- a. define the term federation
- b. state reasons for Africans opposition to the central African federation
- c. explain the following:
  - i. reasons for the imposition of the central African federation
  - ii. successes and failures of the central African federation

##### **16.3.5.3 The role of African independent churches in nationalism**

Candidates should be able to:

- a. define the term African independent churches
- b. explain factors that led to the formation of African independent churches in Malawi
- c. outline examples of African independent churches i.e. their names and their founders
- d. describe the role of African independent churches towards nationalism

**16.3.6 Core Element: Interdependence Between Malawi And World**

**16.3.6.1 Causes and results of the First World War**

Candidates should be able to:

- a. explain the following:
  - i. events that took place in Europe in relation to the First World War between 1870 and 1914
  - ii. causes of the First World War
  - iii. highlights of the First World War
  - iv. factors that led to the defeat of Germany and her allies during the First World War
- b. locate on a map the major countries involved in the First World War
- c. assess the impact of the First World War

**16.3.7 Core Element: Economic And Social Issues In History (Developments in the inter-war period (1919-1939))**

**16.3.7.1 The Paris Peace Conference and Versailles Treaty**

Candidates should be able to:

- a. mention the aims of the Paris Peace Conference
- b. explain the following:
  - i. different positions of the four big powers present at the Paris Peace Conference
  - ii. strengths and weaknesses of the Versailles Treaty
- c. describe the attitudes of the four big powers present at the Paris Peace Conference towards non-western countries such as South Africa and Japan
- d. outline the terms of the Versailles Treaty

**16.3.7.2 The League of Nations**

Candidates should be able to:

- a. mention the aims of the League of Nations
- b. describe the following:
  - i. origins of the League of Nations
  - ii. the organisational structure of the League of Nations
- c. assess the strengths and weaknesses of the League of Nations

**16.3.7.3 Economic problems in Europe**

Candidates should be able to:

- a. describe the economic conditions in Europe after the First World War
- b. compare the different views of the allies towards Germany's economic recovery
- c. outline challenges that Germany faced with the reparations
- d. explain how the challenges that Germany faced with the reparations were resolved

**16.3.7.4 Economic situation in Asia (Japan)**

Candidates should be able to:

- a. explain the impact of the First World War on the Japanese economy

- b. describe the following:
  - i. the philosophy of Asia for Asians
  - ii. factors that made Japan to champion the philosophy of Asia for Asians

#### **16.3.7.5 The Great Depression**

Candidates should be able to:

- a. describe the following:
  - i. economic conditions in the USA in the early 1920s
  - ii. the impact of the Great Depression on the USA and Europe
- b. explain the following:
  - i. causes of the Great Depression
  - ii. how the New Deal attempted to solve the economic problems in the USA

#### **16.3.7.6 The Communist Revolution in Russia**

Candidates should be able to:

- a. explain the following:
  - i. causes of the 1905 and 1917 revolutions in Russia
  - ii. causes and results of the Russian Civil War of 1918-1921
  - iii. how Joseph Stalin made Russia economically and politically strong
  - iv. the impact of communism on Russia and the world
- b. describe the following:
  - i. how the Bolsheviks consolidated power
  - ii. the emergence of Joseph Stalin as a leader of Russia
  - iii. Stalin's achievements and failures
- c. outline Lenin's achievements and failures

#### **16.3.8 Core Element: Leadership Styles In History**

##### **16.3.8.1 Development of autocratic governments in Europe (Germany)**

Candidates should be able to:

- a. describe the rise of Adolf Hitler to power in Germany
- b. explain how the Nazis consolidated power under Adolf Hitler
- c. assess Adolf Hitler's domestic and foreign policies

#### **16.3.9 Core Element: Patriotism And Nationalism**

##### **16.3.9.1 The Second World War**

Candidates should be able to:

- a. locate on a map of the world major countries involved in the Second World War
- b. explain the following:
  - i. causes of the Second World War
  - ii. highlights of the Second World War

- iii. factors that led to the defeat of Germany and her allies during the Second World War
- iv. the results of the Second World War
- c. outline events leading to the Second World War

### **16.3.9.2 Developments after the Second World War**

#### **16.3.9.2.1 Formation of the United Nations Organisation**

Candidates should be able:

- a. mention the aims of the United Nations Organisation
- b. describe the following:
  - i. origins of the United Nations Organisation
  - ii. the organisational structure of the United Nations Organisation
- c. explain the strengths and weaknesses of the United Nations Organisation
- d. compare the League of Nations and the United Nations Organisation

#### **16.3.9.2.2 Post-war alliances**

Candidates should be able to:

- a. describe post-war political and economic alliances i.e. NATO, Warsaw Pact, COMECON, COMINFORM
- b. explain the impact of the post-war alliances

#### **16.3.9.2.3 The Cold War**

Candidates should be able to:

- a. explain the following:
  - i. causes of the Cold War
  - ii. the impact of Cold War on Africa
- b. describe different conflicts of the Cold War i.e. The Iron Curtain Speech, Korean War, Cuban Missile Crisis, Congo crisis

### **16.3.9.3 Decolonisation**

#### **16.3.9.3.1 Asia: India**

Candidates should be able to:

- a. locate the position of India on a map of Asia
- b. describe the following:
  - i. background to the British colonisation of India
  - ii. the British colonial policies on trade, education and press freedom in India
- c. outline factors that led to the rise of nationalism in India
- d. trace the main stages leading to the independence of India
- e. explain the causes, stages and impact of the Hindu-Muslim rivalry in India

#### **16.3.9.3.2 Africa: Kenya**

Candidates should be able to:

- a. Locate the position of Kenya on a map of Africa

- b. Explain the following:
  - i. factors that led to the rise of nationalism in Kenya
  - ii. contributions of the MauMau movement to nationalism in Kenya
  - iii. contribution of women in the MauMau movement
- c. Describe the formation of mass political parties in Kenya i.e. KANU and KADU
- d. Outline the following:
  - i. colonial government's response to the activities of the MauMau movement
  - ii. events leading to Kenya's independence

#### **16.3.10 Core Element: Interrelationships Between The Individual, Family And Society**

##### **16.3.10.1 Post-colonial Africa up to 2000**

Candidates should be able to:

- a. Describe the expectations of Africans at independence
- b. Explain the following:
  - i. socio-economic and political achievements in Africa from independence to 2000
  - ii. socio-economic and political challenges in Africa from independence to 2000
  - iii. impact of post-colonial challenges and crises such as resurgence of multiparty democracy and worsening socio-economic conditions on Africa's political and economic development after 1990

#### **16.4 ASSESSMENT FORMAT**

There shall be **two** papers as follows:

##### **16.4.1 Paper I: Multiple Choice**

- a. The paper shall contain **60** multiple choice questions.
- b. **Thirty** questions shall be derived from Central African History and the other **thirty** questions from World History.
- c. The questions shall be of varying levels of difficulty.
- d. A candidate shall be expected to answer **all** questions.
- e. Each question shall carry **1** mark, giving a total of **60** marks.
- f. The paper shall be taken within **one hour ten minutes**.

##### **16.4.2 Paper II: Free Response**

- a. The paper shall contain **eight** free-response questions.
- b. Each question shall carry **20** marks.
- c. The questions shall be of varying levels of difficulty.
- d. The paper shall have **three** sections, **A, B and C**.
- e. Section **A** shall comprise **two** questions from Central African History. Section **B** shall comprise **two** questions from World History. Section **C** shall comprise **four** questions, **two** from Central African history and **two** from World History.

- f. Candidates shall be required to answer **all** questions in Sections A and B. In Section C, candidates shall be required to answer **one** question from Central African history and **one** question from World history.
- g. In total, a candidate shall respond to **six** questions, totaling **120** marks.
- h. The paper shall be taken within **2 hours**.

## **16.5 PERFORMANCE GRADE DESCRIPTORS-**

The following are competencies expected in History for the award of a pass, credit or distinction.

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>1. Knowledge of historical events and developments e.g.</p> <ul style="list-style-type: none"> <li>a. Causes and results of the First World War</li> <li>b. Social, economic and technological developments</li> <li>c. Political developments such as the Communist Revolution in Russia</li> </ul> <p>2. Understanding of historical concepts</p> <p>3. Arrange events in a chronological order</p>	<p>In addition to the skills for a PASS, the candidate should also display the following competences:</p> <ul style="list-style-type: none"> <li>1. Apply historical knowledge in solving problems</li> <li>2. Comprehensive analysis of facts</li> <li>3. Logical presentation of facts</li> </ul>	<p>In addition to the skills for a CREDIT, the candidate should also display the following competences:</p> <ul style="list-style-type: none"> <li>7. Relate historical events i.e. how the Political alliances caused the First World War</li> <li>8. Make sound judgments on historical developments</li> <li>9. Make logical presentation of facts i.e. in essays</li> <li>10. Assess the impact of historical events</li> </ul>

## **16.6 REFERENCES**

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## **17.0 MSCE HOME ECONOMICS EXAMINATIONS SYLLABUS**

### **17.1 INTRODUCTION**

The Home Economics MSCE examination syllabus takes into account the national needs and ability to deal with problems through provision of knowledge skills and attitudes aimed at improving the quality of life. This is achieved through developing competencies in areas of food, nutrition, entrepreneurship, consumer studies, human growth and development, housing and family resource management. As such Home Economics promotes the well being of the individuals, families and communities which contribute to national development.

### **17.2 AIMS OF THE SYLLABUS**

The aims are to enable candidates to:

- a. demonstrate knowledge and skills in the use, care and maintenance of various kitchen equipment.
- b. demonstrate an understanding of the relationship of food security, food technology, nutrition and health in homes and community.
- c. carry out investigations to solve problems related to nutrition sustainably.
- d. demonstrate an understanding of the developmental needs at various stages of human growth and development for the wellbeing of the individual, family and community.
- e. demonstrate an understanding of the interrelationship between housing, health and environment for the wellbeing of the individual, families and communities for sustainable development.
- f. demonstrate relevant scientific, technological knowledge and skills to generate and maximise the use of available family resources and use of goods and services on the market place for a better quality of life.

### **17.3 ASSESSMENT OBJECTIVES**

#### **17.3.1 Core Element: Kitchen Equipment**

##### **17.3.1.1 Topic: Choice, care and maintenance of large kitchen equipment**

In this topic, candidates should be able to:

- a. list large kitchen equipment and factors to consider when choosing large kitchen equipment
- b. discuss guidelines for choosing large kitchen equipment
- c. discuss ways of caring and maintenance of different large kitchen equipment

##### **17.3.1.2 Topic: Choice, care and maintenance of electrical kitchen equipment**

In this topic, candidates should be able to:

- a. list electrical kitchen appliances
- b. discuss electrical appliances found in the kitchen
- c. describe ways of caring and maintaining large kitchen equipment and electrical kitchen appliances

**17.3.2 Core Element: Food And Nutrition**

**17.3.2.1 Topic: Nutritive value of food**

In this topic, candidates should be able to:

- a. analyse the main foods used in food preparation/cookery
- b. discuss the nutritive value of main foods used in food preparation

**17.3.2.2 Topic: Food technology**

In this topic, candidates should be able to:

- a. list food processing technologies in the home
- b. discuss ways in which food technology can improve food processing in the home

**17.3.2.3 Topic: Food processing**

In this topic, candidates should be able to:

- a. define the term food processing
- b. describe common ways of processing food in the home
- c. discuss the importance of processing food

**17.3.2.4 Topic: Flour and flour mixtures**

In this topic, candidates should be able to:

- a. define the term “raising agents”
- b. list examples of raising agents
- c. discuss the following:
  - i. functions of basic ingredients in flour mixtures
  - ii. different types of flour mixtures
  - iii. methods and common faults in cake making
- d. describe methods of incorporating raising agents into flour mixtures
- e. demonstrate skills in cake making

**17.3.2.5 Topic: Food preservation**

In this topic, candidates should be able to:

- a. define the term “food preservation”
- b. state different ways of preserving food
- c. discuss the following:
  - i. different ways of preserving food
  - ii. main principles underlying food preservation
  - iii. appropriate indigenous technologies for storing preserved food
  - iv. modern food storing technologies
- d. preserve locally available foods
- e. conduct an experiment on effects of heat, acids alkali and freezing on food nutrients

**17.3.2.6 Topic: Principles of nutrition**

In this topic, candidates should be able to:

- a. define the terms “Nutrition” and “Nutrient”
- b. list different types of food nutrients
- c. discuss the following:
  - i. chemical composition and functions of different types of nutrients
  - ii. effects of heat, acid alkalis and freezing on food nutrients
- d. analyse different types of food nutrients

**17.3.2.7 Topic: Meal planning**

In this topic, candidates should be able to:

- a. define the term “meal planning”
- b. discuss the following:
  - i. guidelines for meal planning
  - ii. different types of meals, importance and composition of different meals
  - iii. the nutritional requirements for slimmers/obese and vegetarians
- c. plan meals for different occasions and for different groups of people.
- d. practise tray and table settings and flower arrangements for different meal occasions

**17.3.2.8 Topic: HIV and AIDS and Nutrition**

In this topic, candidates should be able to:

- a. describe the term “HIV/AIDS”
- b. discuss the following:
  - i. progression of HIV to AIDS in relation to nutrition
  - ii. the relationship between HIV and AIDS and nutrition
  - iii. effects of HIV and AIDS on food security
  - iv. nutritional care and support for HIV infected vulnerable groups
- c. analyse the nutritional care and support for people living with HIV and AIDS (PLWHA)

**17.3.2.9 Topic: Convenience foods**

In this topic, candidates should be able to:

- a. define the term “Convenience food”
- b. discuss different types of convenience foods
- c. analyse the importance of convenience foods
- d. prepare meals using convenience foods

**17.3.2.10 Topic: Left over foods (Rechauffe' cookery)**

In this topic, candidates should be able to:

- a. define the term “left over foods”
- b. list dishes that can be made from left over foods
- c. discuss the following:
  - i. how to manage left over foods
  - ii. ways of preparing left over foods for reheating
  - iii. guidelines to be followed when reheating leftover foods
- d. Prepare dishes using leftover foods

**17.3.2.11 Topic: Packed meals**

In this topic, candidates should be able to:

- a. define the term “packed meals”
- b. list dishes suitable for packed meals
- c. discuss the importance, guidelines and suitable equipment for packing meals
- e. plan meals for packing
- f. prepare packed meals for different occasions

**17.3.2.12 Topic: Entertaining**

In this topic, candidates should be able to:

- a. discuss types, importance and etiquette of entertainment
- b. prepare meals for entertainment

**17.3.2.13 Topic: Food additives**

In this topic, candidates should be able to:

- a. define the term “food additives”
- b. list different types of food additives
- c. discuss functions and desirable characteristics of food additives
- d. conduct an experiment on effects of food additives on food

**17.3.2.14 Topic: Food industry in Malawi**

In this topic, candidates should be able to:

- a. define the term “food industry”
- b. describe different types of food industries in Malawi
- c. discuss the following:
  - i. the importance of food industry in Malawi
  - ii. advantages and disadvantages of processed foods
- d. analyse the role of the Malawi Bureau of Standards in food industry

**17.3.2.15 Topic: Nutritional related disorders**

In this topic, candidates should be able to:

- a. list common nutrition related disorders
- b. discuss the following:
  - i. the relationship between food and health
  - ii. causes of common nutrition related disorders
  - iii. possible preventive measures of nutrition related disorders

**17.3.2.16 Topic: Nutritional status of Malawi**

In this topic, candidates should be able to:

- a. define the term “nutritional status”
- b. discuss the following:
  - i. indicators of nutritional status
  - ii. effects of poor nutritional status on Malawians
- c. describe the general nutritional status of Malawians
- d. explain factors influencing the poor nutritional status of Malawians

**17.3.2.17 Topic: Food security**

In this topic, candidates should be able to:

- a. define the terms “food security” and “population growth”
- b. discuss the following:
  - i. components of food security
  - ii. national food security and food security policy programmes
  - iii. strategies for national action plan for food security
- c. analyse the impact of population growth on food security

**17.3.2.18 Topic: Household food demand and supply**

In this topic, candidates should be able to:

- a. define “food demand and supply”
- b. analyse factors affecting food demand and supply
- c. discuss the importance of meeting household food demand and supply

**17.3.2.19 Topic: Meal planning for manual and sedentary workers, adult and the elderly**

In this topic, candidates should be able to:

- a. discuss the following
  - i. the meanings of the terms manual and sedentary workers, adult and the elderly
  - ii. the nutritional requirements for manual and sedentary workers, adult and the elderly
- b. plan meals for manual and sedentary workers, adult and the elderly
- c. prepare meals for manual and sedentary workers, adult and the elderly

**17.3.2.19 Topic: Management of HIV and AIDS related illnesses (Opportunistic infections)**

In this topic, candidates should be able to:

- a. list micro nutrients that are important in HIV and AIDS management
- b. discuss the following:
  - i. opportunistic infections related to HIV and AIDS
  - ii. importance of micro nutrients in HIV and AIDS management
- c. analyse the management of HIV and AIDS related illnesses (opportunistic infections)

**17.3.3. Core Element: Human Growth And Development**

**17.3.3.1 Topic: Human growth and development during adolescent**

In this topic, candidates should be able to:

- a. define the terms “adolescence” and “good grooming” during adolescence
- b. discuss the following:
  - i. reproductive health issues during adolescence
  - ii. common good grooming practices and its importance during adolescence
  - iii. personal clothing during adolescence
- c. analyse growth and developmental needs of adolescent
- d. launder different clothes and articles

**17.3.3.2 Topic: Human growth and development from adulthood to old age**

In this topic, candidates should be able to:

- a. list reproductive health services for adults and the elderly
- b. define the terms “adulthood and old age”
- c. analyse growth and developmental needs of adulthood and old age
- d. discuss challenges in adulthood and old age
- e. discuss reproductive health services for adults and the elderly.
- f. discuss the importance of reproductive health services for adults and the elderly

**17.3.4 Core Element: Housing And Environment**

**17.3.4.1 Topic: Housing, population, environment and sustainable development**

In this topic, candidates should be able to:

- a. define the terms “population”, “environment”, “sustainable development” and “risk management”
- b. list types of risks in the home
- c. discuss the following:
  - i. the relationship of housing, environment, population and sustainable development
  - ii. ways of managing the environment in the home using the 5Rs
  - iii. activities in the home that influence disasters
  - iv. risk management strategies in the home

**17.3.4.2 Topic: Care of the dining room**

In this topic, candidates should be able to:

- a. discuss the following:
  - i. importance and guidelines for daily and weekly cleaning of the dining room
  - ii. importance and guidelines for laundering table linen
  - iii. guidelines for removing stains on table linen
- b. practice daily and weekly cleaning of the dining room
- c. launder table linen, chair backs and doilies

**17.3.4.3 Topic: Housing**

In this topic, candidates should be able to:

- a. list housing institutions and programmes in Malawi
- b. discuss the roles of various housing institutions and programmes in Malawi

**17.3.4.4 Topic: Care for the sitting room and toilet**

In this topic, candidates should be able to:

- a. list types of toilets
- b. discuss the different types of toilets and the importance of cleaning the sitting room and toilets
- c. discuss the following:
  - i. guidelines for daily and weekly cleaning of the sitting room and toilets
  - ii. guidelines for laundering chair backs and doiles
- d. practice daily and weekly cleaning of the sitting room and toilet
- e. launder chair backs and doiles

**17.3.5 Core Element: Family Resource Management**

**17.3.5.1 Topic: Decision Making**

In this topic, candidates should be able to:

- a. define the term 'decision making'
- b. discuss the following:
  - i. factors that influence decision making in the home
  - ii. effects of gender and decision making in the home
- c. analyse importance of equal participation in decision making
- d. relate decision making to family resource management

**17.3.5.2 Topic: Entrepreneurship**

In this topic, candidates should be able to:

- a. define the term 'entrepreneurship' in home economics
- b. list types of business enterprises
- c. discuss the following:
  - i. entrepreneurship skills in home economics
  - ii. the process of developing a small scale business
- d. analyse different types of business enterprises
- e. draft a small scale business plan

**17.3.5.3 Topic: Taxes and Entrepreneurship**

In this topic, candidates should be able to:

- a. list various forms of taxes that affect business enterprises
- b. discuss various forms of taxes that affect business enterprises

**17.3.5.4 Topic: Risk management in business enterprises**

In this topic, candidates should be able to:

- a. define the term ‘risk management’
- b. list different investment opportunities
- c. discuss risk management strategies in business enterprises and different investment opportunities
- d. practise risk management in business enterprises

**17.3.5.5 Topic: Consumerism**

In this topic, candidates should be able to:

- a. define the term ‘Consumerism’
- b. list the following:
  - i. factors that affect consumer behavior
  - ii. types of information on different types of product labels
  - iii. consumer protection organisations in Malawi
- c. discuss the following:
  - i. problems that affect consumer behavior
  - ii. right and responsibilities of the consumer
  - iii. functions of the consumer Act and consumer organisations in Malawi and their roles
- e. describe ‘Consumer Act’
- f. interpret information found on product labels

**17.3.5.6 Topic: Financial management**

In this topic, candidates should be able to:

- a. define the terms “savings” and “budget”
- b. describe financial management
- c. discuss the following:
  - i. components of financial management
  - ii. the basis for a budget and importance of savings
  - iii. different ways of generating savings
- d. plan a monthly family budget

**17.3.5.7 Topic: Insurance**

In this topic, candidates should be able to:

- a. define the term “insurance”
- b. list various types of insurance
- c. analyse different types of insurance

**17.3.5.8 Topic: Human resource management in the home**

In this topic, candidates should be able to:

- a. list types of human resources and labour saving devices used in the home
- b. discuss the following:
  - i. management of human resource in the home
  - ii. labour saving devices used in the home
  - iii. the importance of proper management of human resource

#### **17.3.5.9 Topic: Time management**

In this topic, candidates should be able to:

- a. describe “time management”
- b. discuss ways of managing time and the importance of time management
- c. practice time management

### **17.4 ASSESSMENT FORMAT**

Home economics examination shall consist of two papers and these shall be examined as follows:

#### **17.4.1 Paper I (Theory)**

- a. The paper shall have **two** sections, **A** and **B**.
- b. The questions shall be free response and shall be drawn across the syllabus.
- c. Section **A** shall comprise short answer questions which are going to be compulsory.
- d. Section **A** shall have **12** questions worth **70** marks which shall integrate the themes.
- e. Section **B** shall comprise **3** structured essays worth **30** marks.
- f. Total marks for the paper shall be **100**.
- g. Candidates shall be required to answer all questions on spaces provided in question paper.
- h. Duration of paper shall be **2 ½ hours**

#### **17.4.2 Paper II (Practical)**

- a. The paper shall have **one** question which shall be carried out in **two** sessions, planning and practical sessions.
- b. In planning session, candidates shall plan what they are going to prepare, this shall be done in **45 minutes**
- c. In the practical session, candidates shall demonstrate the skills that they have acquired in class and display final products.
- d. The practical session shall be carried out in **1 hour 30 minutes** and in turns according to candidature.
- e. The whole paper shall have a total of **80** marks.
- f. The marks shall be split into **three** parts, planning **20** marks, skills **25** marks and results **35** marks.
- g. The weighting of MSCE Home Economics Examination papers shall be as follows:

	<b>MARKS</b>	<b>TIME</b>
Paper 1(Theory)	100	2 ½ hours
Paper 11 (Practical)		
Planning	20	45 mins
Preparations	60	1 ½ hour

### **17.5 PERFORMANCE GRADE DESCRIPTORS**

Candidates shall be assessed based on the demonstration of various competences as indicated in the table presented below:

PASS	CREDIT	DISTINCTION
<p>Candidate should be able to demonstrate the following abilities:</p> <ul style="list-style-type: none"> <li>a. Recalling information</li> <li>b. Partial interpretation of information</li> <li>c. Partially making accurate observations</li> </ul>	<p>Showed all the skills under pass and in addition, the following skills were observed:</p> <ul style="list-style-type: none"> <li>a. Good analytical skills</li> <li>b. Analyzing given information</li> <li>c. Partial planning skills</li> <li>d. Good interpretation of information and diagrams</li> <li>e. Good judgmental skills</li> </ul>	<p>Showed all skills under credit and in addition the following skills were observed:</p> <ul style="list-style-type: none"> <li>a. Excellent organizational skills</li> <li>b. Ability to apply information to different situations</li> <li>c. Excellent analytical skills</li> </ul>

## **17.6 REFERENCES**

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## **18.0 MSCE MATHEMATICS EXAMINATION SYLLABUS**

### **18.1 INTRODUCTION**

The mathematics examination syllabus must take into account the national needs and the future of employment and careers of the students as such it has been developed basing on the teaching syllabus for Mathematics which was developed in 2013. It is meant to help in development of MSCE mathematics papers to achieve comparability of the papers over years for validity and reliability of MSCE mathematics examination.

### **18.2 AIMS OF THE SYLLABUS**

The aims of MSCE mathematics examination syllabus are to enable students to:

- a. carry out basic operations in mathematical calculations
- b. demonstrate an understanding of mathematical principles and formulae
- c. apply mathematical concepts to solve problems involving real life situations
- d. present logically proofs and calculations to make valid conclusions using mathematical theorems
- e. demonstrate an understanding of patterns and relationships in mathematics
- f. demonstrate an understanding of construction of geometrical figures using mathematical instruments

### **18.3 ASSESSMENT OBJECTIVES**

#### **18.3.1 Core Element: Number and Numeration**

##### **18.3.1.1 Topic: Quadratic Equations**

Candidates should be able to:

- a. factorise quadratic expressions where the co-efficient of the variable with power two is not equal to one
- b. solve the following:
  - i. quadratic equations by completing the square or using the quadratic formula
  - ii. real life problems using quadratic equation concepts

##### **18.3.1.2 Topic: Irrational Numbers**

Candidates should be able to:

- a. simplify irrational numbers by taking out a square root of a perfect square number and adding or subtracting like surds
- b. rationalise the following:
  - i. surd denominators with a single term
  - ii. surd denominators using conjugate surds

##### **18.3.1.3 Topic: Algebraic Fractions with Linear or Quadratic Denominators**

Candidates should be able to carry out basic operations on algebraic fractions with linear and quadratic denominators :

- add
- subtract
- multiply
- divide

**18.3.1.4 Topic: Subject of the Formula**

Candidates should be able to change the subject of the formula or equations with powers or roots up to 3.

**18.3.1.5 Topic: Exponential and Logarithmic Equations**

Candidates should be able to:

- solve equations involving exponents
- solve equations involving logarithms using logarithmic rules:

- $\log_a 1 = 0$
- $\log_a a = 1$
- $\log_a xy = \log_a x + \log_a y$
- $\log_a(x/y) = \log_a x - \log_a y$
- $\log_a x^m = m \log_a x$
- $\log_a \sqrt[m]{x} = \frac{1}{m} \log_a x$

**18.3.1.6 Topic: Matrices**

Candidates should be able to carry out basic operations on  $2 \times 2$  matrices:

- Adding or subtracting
- multiplying matrix by scalar
- multiplying by two matrices

**18.3.1.7 Topic: Simultaneous Linear and Quadratic Equations**

Candidates should be able to solve simultaneously:

- a linear and a quadratic equations by substitution
- real life problems involving one linear and one quadratic equations

**18.3.1.8 Topic: Progressions**

Candidates should be able to:

- calculate the nth term, common difference or ratio, the sum, number of terms of an AP or GP using formulas
- applying AP concepts in solving real life problems

**Formulas for AP:**

- $T_n = a + (n-1)d$  where  $a$  is the first term,  $n$  is the number of terms,  $d$  is the common difference
- $S_n = \frac{n}{2} \{ 2a + (n-1)d \}$  or  $\frac{n}{2}(a + l)$  where  $l$  is the last term

**Formulas for GP:**

- $T_n = ar^{(n-1)}$  where  $r$  is the common ratio
- $S_n = \frac{ar^{(n-1)}}{r-1}$  or  $S_n = \frac{a(1-r^n)}{1-r}$  where  $r \neq 1$

### **18.3.1.9 Topic: Polynomials**

Candidates should be able to:

- a. find the remainder of polynomials of third degree using long division or remainder theorem
- b. factorise polynomials of third degree by using factor theorem and long division
- c. solve cubic equations using factor theorem and long division
- d. find coefficients in identical polynomials of third degree

### **18.3.2 Core Element: Structure**

#### **18.3.2.1 Topic: Sets**

Candidates should be able to:

- a. list elements of a compliment of a set, a union or an intersection of two or three sets
- b. drawing Venn diagrams to illustrate the union or the intersection of two or three sets
- c. solve real life problems using sets (Venn diagrams)

#### **18.3.2.2 Topic: Transformations**

**Candidates should be able to:**

- a. draw a rotation of a simple plane figure about a given point through a given angle clockwise or anticlockwise
- b. draw a translation of a simple plane figure given a column vector
- c. calculate coordinates of an image point given a translation vector and an object point
- d. calculate coordinates of an object point given a translation vector and an image point
- e. calculate a translation vector given coordinates of object and image points
- f. draw an enlargement of a simple plane figure given a scale factor ( positive whole number or a vulgar fraction) and a centre of enlargement
- g. find the scale factor or centre of an enlargement given an object and its enlargement

#### **18.3.2.3 Topic: Vectors**

Candidates should be able to:

- a. carry out basic operations on vectors
  - Addition
  - Subtraction
  - Multiply a vector by scalar
- b. calculate magnitude or mid-point of a vector
- c. show that points are collinear using vector method
- d. solve problems by applying a triangular or parallelogram law

### **18.3.3 Core Element: Space, Shape and Measurement**

#### **18.3.3.1 Topic: Circle Geometry (Chord Properties)**

Candidates should be able to calculate using theorems on chord properties of a circle:

- a. the length of the chord given radius and distance from the center
- b. distance from the centre given the length of a chord and radius
- c. radius given length of a chord and distance from the centre

**Theorems on chord properties of a circle:**

- The perpendicular to a chord from the centre bisects the chord or a straight line drawn from the centre of a circle to bisect a chord which is not a diameter is at right angles to the chord
- Equal chords of the circle are equidistant from the centre and its converse

**18.3.3.2 Topic: Circle Geometry (Angle Properties)**

Candidates should be able to:

- a. write formal proofs of the theorems on angle properties of a circle:
  - angle at the centre is twice the angle at the circumference
  - angle in a semicircle is a right angle
  - angles subtended by the same arc or chord are equal
- b. apply the theorems on angle properties of a circle to:
  - calculate a value of an angle
  - show that points are concyclic
  - show that a given quadrilateral is cyclic

**Theorems on angle properties of a circle:**

- angle at the centre is twice the angle at the circumference
- angle in a semicircle is a right angle
- angles subtended by the same arc or chord are equal
- opposite angles of a cyclic quadrilateral are supplementary
- exterior angle of cyclic quadrilateral is equal to the interior opposite angle

**18.3.3.3 Topic: Tangents to Circles**

Candidates should be able to:

- a. write formal proofs of the theorems of tangents to circles:
  - tangents to a circle from an external point are equal in length
  - a line joining an external point to the centre of a circle bisects the angle between the tangents of the circle
  - an angle between a chord and a tangent is equal to the angle subtended by the chord in the alternate segment
- b. apply the theorems of tangents to circles to:
  - prove that sides or angles are equal
  - calculate a value of an angle

**Theorems of tangents to circles:**

- a tangent and the radius of a circle at the point of contact are perpendicular to each other
- tangents to a circle from the same external point are equal in length
- a line joining an external point of two tangents to the centre of a circle bisects the angle between the tangents
- an angle between a chord and a tangent is equal to the angle subtended by the chord in the alternate segment
- c. construct a tangent to a circle from a given point on the circumference
- d. construct tangents from an external point to a circle

#### 18.3.3.4 Topic: Trigonometry

Candidates should be able to:

- calculate angles and sides of right-angled triangles using trigonometric ratios:
- solve real life problems such as angle of elevation or depression and bearing using trigonometric ratios

- $\text{Sine} = \frac{\text{Opposite}}{\text{Hypotenuse}}$

- $\text{Cosine} = \frac{\text{Adjacent}}{\text{Hypotenuse}}$

- $\text{Tangent} = \frac{\text{Opposite}}{\text{Adjacent}}$

- calculate side, angle and area of a non-right-angled triangle using trigonometric rules:
- calculate the bearing of a point and the distance between points using sine or cosine rule by sketching diagrams from given information

- Sine rule:  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

- Cosine rule:  $a^2 = b^2 + c^2 - 2bc \cos A$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

- Area =  $\frac{1}{2} bc \sin A, \frac{1}{2} ac \sin B, \frac{1}{2} ab \sin C$  for any non-right-angled triangle ABC

#### 18.3.3.5 Topic: Similarity

Candidates should be able to:

- calculate ratios of areas of similar shapes or volumes of similar solids given scale factor and area or volume of one shape or solid
- calculate scale factor given areas of similar shapes or volumes of similar solids
- find lengths of sides of similar shapes given area or volume factor and one side

- Scale factor = Ratio of corresponding sides of similar shapes or solids
- Area factor =  $(\text{Scale factor})^2$
- Volume factor =  $(\text{Scale factor})^3$

#### 18.3.3.6 Topic: Mensuration

Candidates should be able to:

- calculate surface areas and volumes of 3-D shapes such as cubes, cuboids, cylinders, pyramids, cones, spheres and prisms using formulas
  - Area of a circle of radius  $r$  is  $\pi r^2$  and its perimeter or circumference is  $2\pi r$

- ii. Area of the curved surface of a cylinder is  $2\pi rh$
- iii. Surface area of sphere of radius  $r$  is  $4\pi r^2$  and its volume is  $\frac{4}{3}\pi r^3$
- iv. Volume of a pyramid is  $\frac{1}{3} \text{base area} \times h$
- v. Volume of a cone is  $\frac{1}{3}\pi r^2 h$
- vi. Volume of prisms and cylinders is area of cross section x height,

**Formulas 'iii' and 'v' shall be given in the examinations**

- b. calculate surface areas and volumes of composite shapes
- c. solve problems involving areas and volumes of 3-D shapes
- d. calculate angles between two lines and between a plane and a line
- e. calculating lengths of sides of 3-D shapes using Pythagoras Theorem /trigonometric

#### **18.3.4 Core Element: Patterns, Relations, Functions and Change**

##### **18.3.4.1 Topic: Mappings and Functions**

Candidates should be able to:

- a. drawing arrow diagrams from given or calculated domain or range
- b. calculate the range given domain or the domain given range

##### **18.3.4.2 Topic: Coordinate Geometry**

Candidates should be able to:

- a. calculate distance between two points on a straight line
- b. find the equation of a line in the form  $y = mx + c$ , where  $m$  is gradient and  $c$  is a constant:
  - given gradient or tangent of an angle and a point on the line
  - given two points on the line
  - given a graph of the straight line
  - through a point and parallel to a given line
- c. calculate the mid-point of a line segment

##### **18.3.4.3 Topic: Variations**

Candidates should be able to:

- a. solve problems on joint variations:
  - direct and direct
  - inverse and inverse
  - direct and inverse
- b. solve partial variation problems

##### **18.3.4.4 Topic: Inequalities**

Candidates should be able to:

- a. sketch graphs to show the region represented by inequalities of the form:

$$x > b \text{ or } x < b$$

$$x \geq b \text{ or } x \leq b$$

$y > b$  or  $y < b$   
 $y \geq b$  or  $y \leq b$   
 $ax + by < c$   
 $ax + by \leq c$   
 $ax + by > c$   
 $ax + by \geq c;$

where  $a$ ,  $b$ , and  $c$  are constants, by shading the unwanted region

- b. write down inequalities in one or two variables that describe a given region

#### 18.3.4.5 Topic: Travel Graphs

Candidates should be able to:

- a. draw velocity-time graphs
- b. calculate speed (velocity), time, and acceleration or deceleration using a velocity-time graph
- c. calculate distance as area under a velocity-time graph

#### 18.3.4.6 Topic: Linear Programming

Candidates should be able to solve linear programming problems by sketching graphs of inequalities in one or two variables

#### 18.3.4.7 Topic: Graphs of Functions (Quadratic or Cubic)

Candidates should be able to:

- a. solve simultaneously graphs of a linear and a quadratic or a linear and a cubic equations graphically
- b. formulate a quadratic equation given a quadratic graph which cuts  $x$ -axis
- c. find equation of the line of symmetry, maximum or minimum value of graph of a quadratic function

#### 18.3.5 Core Element: Statistics

##### 18.3.5.1 Topic: Statistics

Candidates should be able to:

- a. calculate median, variance or standard deviation of ungrouped data
- b. calculate mean or mode of grouped data
- c. present statistical data in the most appropriate form of tables or statistical diagrams such as:
  - frequency tables or pie charts for ungrouped data
  - frequency tables, histograms or frequency polygons for grouped data
- d. interpret statistical data using measures of central tendency or spread

##### 18.3.5.2 Topic: Probability

Candidates should be able to calculate the probability of two or more events using a probability space table or probability tree diagram for independent or dependent events

## **18.4 ASSESSMENT FORMAT**

MSCE Mathematics shall have two papers: Paper I and paper II

### **18.4.1 Paper I**

- a. The paper shall have a total of **100** marks.
- b. Time allowed for the paper shall be **2 hours**.
- c. The paper shall have **twenty** questions and candidates shall answer all the questions.
- d. Spaces shall be provided to each question for candidates to write their answers
- e. Basic or standard scientific calculators may be used during the examinations.
- f. The questions in the paper shall be from the following topics:
  - i. quadratic equations (factorization and solving by completing the square or using quadratic formula)
  - ii. irrational numbers (with square root of a perfect number with surd denominators and a single term)
  - iii. subject of the formula
  - iv. matrices
  - v. progressions (GP)
  - vi. polynomials (remainder of polynomials and identical polynomials)
  - vii. transformations
  - viii. vectors (basic operations and magnitude or mid-point of a vector)
  - ix. circle geometry (chord and angle properties, calculations only)
  - x. tangents to circles (calculations only)
  - xi. trigonometry I (using trigonometry ratios)
  - xii. similarity
  - xiii. mensuration (surface areas and volume of 3-D shapes)
  - xiv. mapping and functions
  - xv. coordinate geometry
  - xvi. variations (joint)
  - xvii. inequalities
  - xviii. travel-graphs
  - xix. statistics (ungrouped data)

### **18.4.2 Paper II**

- a. The paper shall have a total of **100** marks.
- b. Time allowed for the paper shall be **2½ hours**
- c. d. The paper shall have two sections, **A** and **B**.
- d. Section **A** shall have **six** compulsory questions worth **60** marks. Each question shall have two parts, **(a)** and **(b)**.
- e. Section **B** shall have **six** choice questions with **10** marks each. Candidates shall be required to answer **any four** questions worth **40** marks.
- f. Spaces shall be provided to each question for candidates to write their answers
- g. Basic or standard scientific calculators may be used during the examinations.
- h. The questions in the paper shall be from the following topics:
  - i. quadratic equations (real life problems)
  - ii. irrational numbers (conjugate surds)
  - iii. algebraic fractions

- iv. simultaneous linear and quadratic equations
- v. progressions (AP)
- vi. polynomials (factorisation and solving cubic equations)
- vii. sets
- viii. vectors (collinear points and application of triangular or parallelogram law)
- ix. circle geometry (angle properties; proofs only)
- x. tangents to circles (construction and proofs)
- xi. trigonometry II (using trigonometry rules)
- xii. mensuration (surface areas and volume of composite shapes, angles between two lines or between a plane and a line)
- xiii. linear programming
- xiv. graphs of functions (quadratic or cubic)
- xv. variations (partial)
- xvi. statistics (grouped data)
- xvii. probability

### **18.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
<p>Candidates should be able to demonstrate the following abilities:</p> <ol style="list-style-type: none"> <li>1. Substituting variable(s) with number(s) in a function</li> <li>2. Writing numbers in ascending or descending order</li> <li>3. Adding or subtracting or multiplying or dividing directed numbers or terms</li> <li>4. Breaking a term into two appropriate factors</li> <li>5. Factoring out common factors in algebraic expressions</li> <li>6. Finding LCM of algebraic fractions</li> <li>7. Subtracting coordinates of points</li> <li>8. Writing down conjugate surds</li> <li>9. Rounding off figures to nearest appropriate values</li> <li>10. Inverting numbers</li> <li>11. Plotting coordinates</li> </ol>	<p>Candidates should be able to demonstrate abilities at pass <b>in addition</b> to the following:</p> <ol style="list-style-type: none"> <li>1. Adding and subtracting like and unlike terms</li> <li>2. Multiplying row by column/by scalar in matrices</li> <li>3. Calculating common difference/ratio of an AP or GP</li> <li>4. Factorising a quadratic expression completely</li> <li>5. Clearing denominators completely in algebraic equations involving fractions</li> <li>6. Negating vectors</li> <li>7. Substituting into correct formulae in calculations</li> <li>8. Constructing lines, angles and circles using mathematical instruments</li> <li>9. Transforming a formulae or equations</li> <li>10. Multiplying conjugate surd by a numerator and denominator</li> <li>11. Isolating an unknown by squaring or square rooting or cubing or cube rooting</li> <li>12. Portioning a circle according to angles</li> <li>13. Sketching charts, graphs, Venn, arrow or probability tree diagrams</li> <li>14. Calculating lengths and Portioning a circle according to angles</li> <li>15. Sketching charts, graphs, Venn, arrow or probability tree diagrams</li> <li>16. Calculating lengths and angles using circle theorems</li> </ol>	<p>Candidates should be able to demonstrate abilities at pass and at credit in addition to the following:</p> <ol style="list-style-type: none"> <li>1. Applying theorems or properties in proofs</li> <li>2. Interpreting graphs and diagrams</li> <li>3. Changing word problems into number sentences, diagrams or graphs</li> <li>4. Presenting proofs and calculations information in a logical order to make valid conclusions</li> <li>5. Formulating equations/inequalities to solve real life situations</li> </ol>

12. Listing elements of a union or an intersection of three sets 13. Removing a denominator in algebraic equations involving fractions 14. Adding or subtracting corresponding elements	17. Drawing a translation, rotation and enlargement of an object 18. Labelling axes using Labelling axes using specified scales 19. Shading unwanted side of an inequality 20. Plotting and joining points on a Cartesian Plane 21. Writing down coördinates of points from a graph 22. Writing numbers in same base 23. Constructing frequency tables	6. Using problems using graphs, Venn diagrams or frequency tables to solve problems
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## **19.0 MSCE METALWORK EXAMINATION SYLLABUS**

### **19.1 INTRODUCTION**

This examination syllabus has been designed to equip students with prerequisite knowledge and skills to apply analytical, research, technological, entrepreneurial, critical thinking and vocational skills in a creative and innovative way. This helps the students to identify problems and develop their appropriate solutions for self-reliance and national development.

### **19.2 AIMS OF THE SYLLABUS**

The Metalwork MSCE examination syllabus takes into account the national needs and the future employment and careers of the candidates as stipulated in the national curriculum. The aims are to enable candidates to:

1. demonstrate practical and intellectual skills in production of metal artifacts
2. demonstrate and apply entrepreneurial knowledge and skills for self employment and job creation
3. exhibit knowledge on metalwork materials and apply it to the sustainable development of the natural and physical environment
4. demonstrate innovative and creative ways of solving problems that affect the society
5. demonstrate skills in construction and principles of design and drawing in Metalwork
6. demonstrate an understanding of material science and apply it when handling materials

### **19.3 ASSESSMENT OBJECTIVES**

#### **19.3.1 Core Element: Production Technology**

##### **19.3.1.1 Topic: Safety**

In this topic, candidates should be able to:

- a. discuss the following:
  - i. general safety working conditions in a workshop (dressing, procedure, tidiness of the working area, storage area, passages)
  - ii. safe working techniques
  - iii. the best methods of disposing of dangerous materials(sharp cut-off metals, glasses, acids, etc)
- b. explain safe use of machine tools (lathe, shaper, grinder and drilling machine);
- c. describe the following:
  - i. care and maintenance of machine tools (lubricants, machine cleaning)
  - ii. safe methods of locating and storing dangerous materials (acid pickles, combustible fuels)

##### **19.3.1.2 Topic: Materials**

In this topic, candidates should be able to:

- a. describe the working characteristics of materials (physical, mechanical properties)

- b. relate materials and suitability to particular operations (forging, casting, extruding, pressing, spinning and machining)

#### **19.3.1.3 Topic: Hand Tools and Processes**

In this topic, candidates should be able to:

- a. define terms related to hand processes e.g limits and fits
- b. discuss types of limits and fits
- c. describe the construction of precision tools e.g marking out tool (surface plate, scribing block, parallel block), measuring and testing tools (Vernier callipers, micrometre, gauges and plugs)
- d. sketch tool profiles
- e. dimension shafts and holes to show limits and fits

#### **19.3.1.4 Topic: Machine Tools and Processes**

In this topic, candidates should be able to:

- a. state the following:
  - i. uses of centre lathe accessories e.g. travelling and fixed steady
  - ii. parts and accessories of machines and their uses e.g. centre lathe, shaper, drilling machine, etc
- b. discuss the following:
  - i. safety when using machines e.g. lathe, shaper, drilling machine, etc
  - ii. how to set a cutting tool on a shaping machine
- c. describe the following:
  - i. operations that can be done on a lathe machine e.g. taper turning, boring, drilling, reaming, knurling, threading, etc
  - ii. types and holding methods of shaper cutting tools and tool angles for a shaper cutting tool
  - iii. methods of holding work on a centre lathe using e.g three jaw self-centring chuck, four independent jaw chuck, between centres, catch plate and faceplate
- d. explain shaping processes e.g. vertical, horizontal, angular, grooving, etc;
- e. set cutting tools on machines e.g. a lathe machine, shaper, drilling machine, etc
- f. relate tool cutting speeds to feeding speeds during operations of machines
- g. use simple form tools to produce different profiles on artifacts on machines

#### **19.3.1.5 Topic: Machine Forging**

In this topic, candidates should be able to:

- a. state the following:
  - i. advantages and disadvantages of press forging and drop forging
  - ii. forging tools and their uses
- b. discuss safety in forge work
- c. explain machine forging processes e.g. drop forging, press forging, roll forming, etc

**19.3.1.6 Topic: Theory of Metal Cutting**

In this topic, candidates should be able to:

- a. state functions of coolants, cutting solutions and lubricants
- b. define terms used in metal cutting e.g. coolants, cutting solutions, lubricants, etc
- c. give the effects of rake angle, clearance angle and tool angle on cutting
- d. outline safety precautions to be considered when using cutting solutions, coolants and lubricants
- e. discuss the following:
  - i. types and properties of cutting solutions, lubricants and coolants
  - ii. cutting speeds and feeds as used in cutting tools
- f. describe the following:
  - i. the theory of metal cutting in terms of chip formation and chip breaking
  - ii. cutting angles e.g. rake angle, clearance angle, tool angle, etc
- g. determine suitability of lubricants, coolants and cutting solutions for particular jobs
- h. compare the cutting action of different tools e.g. lathe tools, files, hacksaws, cold chisels, taps and dies, reamers and drill bits
- i. calculate cutting speeds given diameter of shafts, type of material and required type of finish

**19.3.1.7 Topic: Sheet Metal**

In this topic, candidates should be able to:

- a. name the tools that are used in sheet metalwork
- b. state uses of sheet metal tools
- c. describe safety hazards related to sheet metal working
- d. produce artifacts through the design process by
  - developing production plans
  - developing templates using AutoCAD
  - realising the sheet metal artifact

**19.3.1.8 Topic: Arc Welding**

In this topic, candidates should be able to:

- a. define terms used in arc welding
- b. state welding consumables
- c. discuss safety in arc welding processes e.g. using welding equipment, personal safety
- d. describe the following:
  - i. parts and accessories of a welding machine
  - ii. types of welding joints
- e. explain welding defects e.g. crater, spatter, blowholes, insufficient fusion, porosity, solid inclusions, etc
- f. prepare and weld different types of joints e.g. butt joint, tee joint, corner joint, etc

**19.3.1.9 Topic: Oxy-fuel Gas Welding**

In this topic, candidates should be able to:

- a. discuss safe welding and handling behavior in terms of:
  - safety hazards related to gas welding
  - safe handling procedures of gas welding equipment
  - safety devices in gas welding equipment
- b. describe the following:
  - i. parts of welding equipment, accessories to the equipment and their functions
  - ii. consumables as used in oxy-fuel gas welding processes
  - iii. welding defects in oxy-fuel gas welding
- c. explain gas welding techniques e.g. vertical up, forehand, tilt the top, weave, stringer, etc
- d. join metals using oxy-fuel gas welding (fusion welding)

**19.3.1.10 Topic: Metal Finishing**

In this topic, candidates should be able to:

- a. define terms used in metal finishing;
- b. describe different types of finishes;
- c. explain the following:
  - i. methods of finishing metal e.g. polishing, anodizing, electroplating, enamelling, galvanizing, etc
  - ii. safe metal finishing practices.

**19.3.2 Core Element: Design Process and Realisation**

**19.3.2.1 Topic: The Design Process**

In this topic, candidates should be able to:

- a. develop the following:
  - i. an idea for designing (write a design brief, a design situation from a problem
  - ii. production plans e.g. working drawings according to BS 8888, a production schedule, select production processes, etc
- b. conduct an investigation e.g. analysing data, discussing optimization, etc
- c. generate and sketch possible ideas to address the problem
- d. mobilise resources, produce and evaluate products or artifacts e.g. select materials, produce cutting list, select production tool, make, test and evaluate the product etc

**19.3.3 Core Element: Entrepreneurship**

**19.3.3.1 Topic: Marketing**

In this topic, candidates should be able to:

- a. define marketing terms in relation to metalwork
- b. describe marketing processes e.g situation analysis, marketing strategies, 4ps of marketing mix decisions, implementation and control, SWOT analysis, etc

### **19.3.3.2 Topic: Resource Management**

In this topic, candidates should be able to:

- a. define terms used in resource management e.g. human resource management, assets, etc
- b. give examples of assets
- c. describe human resource management in terms of:
  - planning business activities
  - time management
- d. discuss financial resource management with reference to:
  - records/Book keeping
  - income and expenditure
- e. discuss Asset Management in terms of materials, assets and effective use of materials

### **19.3.3.3 Topic: Costing and Pricing**

In this topic, candidates should be able to:

- a. define direct and indirect costs in metalwork
- b. explain the following:
  - i. factors that affect the cost of metal product e.g materials, labour and overheads
  - ii. factors that affect the price of a metal product on the market e.g. production costs, demand and supply, profit margin, and competition

## **19.4 ASSESSMENT FORMAT**

### **19.4.1 Paper I (Theory)**

- a. Time allowed for this paper shall be **2hours 45minutes**.
- b. The paper shall have **three sections; A, B and C**.
- c. Section **A** shall comprise of short answer questions, section **B** shall comprise of restricted essay questions and section **C** shall have closed free response questions on drawing and design.
- d. The paper shall cover the whole syllabus except practical components.
- e. Section **A** shall have five compulsory questions of **6 marks each** worth **30 marks**, section **B** shall have three questions of **15 marks each** where **two** questions shall be answered giving a total of **30 marks** and section **C** shall have two questions of **20 marks each** giving a total of **40 marks**.
- f. The paper shall have total marks of **100**.
- g. The questions in the paper may have split/sub essay questions e.g. 1 a, 1 b, etc.
- h. The paper shall have space for answering the questions and all questions shall be answered.
- i. All calculations must be done clearly and shown in the spaces provided in the question paper.

**19.4.2 Paper II (Practical)**

- a. Time allowed for this paper shall be **3hours**.
- b. The paper shall have only **one** question.
- c. The question shall be of **100** marks.
- d. Materials for the practical shall be provided to candidates.

**19.4.3 Paper III (Coursework)**

- a. The paper shall have **at least two** projects. The projects shall reflect skills on:
  - Sheet metalwork
  - Welding
  - Forging
  - Welding
  - Threading
  - Riveting
  - Metal finishing (at least two methods)
  - Design folder for each project
- b. Each project shall have **30** marks giving a total of **90** marks.

*N.B 20 marks for project product and 10 marks for folder design*

**19.5 PERFORMANCE GRADE DESCRIPTORS**

Table below shows expected skills and competencies in MSCE Metalwork examination at a Pass, Credit and Distinction grade categories.

PASS	CREDIT	DISTINCTION
<p>Candidates with a <b>PASS</b> shall be able to demonstrate the following skills and competencies:</p> <ol style="list-style-type: none"> <li>1. recall information</li> <li>2. partially interpret and identify diagrams</li> <li>3. draw some simple sketches</li> <li>4. come up with at least an idea of a design</li> <li>5. draw simple orthographic and isometric views</li> <li>6. measure some parts satisfactorily</li> <li>7. do simple machine work</li> <li>8. do most hand processes</li> </ol>	<p>Candidates with a <b>CREDIT</b> shall show all skills and competencies under <b>PASS</b> and in addition, the following:</p> <ol style="list-style-type: none"> <li>1. make well labelled diagrams</li> <li>2. show understanding of procedures and processes</li> <li>3. come up with two ideas for the design</li> <li>4. include some attachments necessary for the functionality of a design</li> <li>5. measure parts accurately</li> <li>6. show some degree of mastery of hand and machine tools</li> </ol>	<p>Candidates with a <b>DISTINCTION</b> shall show all skills and competencies under <b>CREDIT</b> and in addition, the following:</p> <ol style="list-style-type: none"> <li>1. Answer application questions where designing was required</li> <li>2. describe processes logically</li> <li>3. make well labelled and neat sketches</li> <li>4. draw isometric and orthographic views of the adopted idea clearly</li> <li>5. operate machines skilfully</li> <li>6. make threads, knurling, chamfers, etc accurately</li> <li>7. show masterly of bench and machine work</li> </ol>

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## **20.0 MSCE PHYSICS EXAMINATIONS SYLLABUS**

### **20.1 INTRODUCTION**

The Physics MSCE Examination syllabus guides candidates to demonstrate knowledge of fundamental theoretical and practical principles of science which are useful in the understanding of the technological world. It also helps to assess scientific attitudes such as curiosity, creativity and inquiring mind towards science and scientific developments.

### **20.2 AIMS OF THE SYLLABUS**

Physics syllabus must take into account the national needs and the future employment and career of the students. The aims are to enable the candidates to:

- a. generate, critically analyse and evaluate scientific data from observations and experiments
- b. relate the behaviour of matter from the microscopic level to the macroscopic level when subjected to different environments and creatively apply these properties so as to bring about technological developments
- c. demonstrate the use of appropriate theories to explain various states of motion including the energy interactions and the changes that take place due to forces
- d. demonstrate an understanding of the laws and principles of electricity, magnetism and then apply this knowledge in areas such as analogue and digital electronic systems
- e. demonstrate an understanding and apply the knowledge about waves and their properties in designing and developing various technologies in communication, medicine, musical and military equipment
- f. demonstrate knowledge about principles of radioactivity and how radioactive materials are safely handled, used, and stored

### **20.3 ASSESSMENT OBJECTIVES**

#### **20.3.1 Core Element: Scientific Investigation and Skills**

##### **20.3.1.1 Topic 1: Measurement**

In this topic, candidates should be able to:

- a. read scales of various measuring instruments for very small measurements
- b. express the following quantities in
  - i. standard notation
  - ii. SI units.
- c. convert one unit to another within the same quantity.

##### **20.3.1.2 Topic 2: Scientific Investigation**

In this topic, candidates should be able to:

- a. identify the following:
  - i. types of errors in a given experiment
  - ii. sources of errors in a given experiment and how to minimize the errors
- b. design a scientific investigation

- c. carry out a scientific investigation
- d. plot a line graph and use the graph to analyse scientific data
- e. write lab reports
- f. relate an experimental conclusion to the hypothesis

### **20.3.2 Core Element: Properties of matter**

#### **20.3.2.1 Topic: Kinetic Theory of Matter**

In this topic, candidates should be able to:

- a. state the meaning of the term *absolute temperature*
- b. explain the cause of gas pressure
- c. explain the relationship between average molecular speed and temperature
- d. describe the kinetic theory of solids, liquids and gases

#### **20.3.2.2 Topic: Thermometry**

In this topic, candidates should be able to:

- a. identify various types of thermometers
- b. differentiate types of temperature scales
- c. describe how various thermometers function
- d. convert temperature from one scale to another

#### **20.3.2.3 Topic: Thermal Expansion**

In this topic, candidates should be able to:

- a. define temperature
- b. differentiate heat from temperature
- c. describe the following:
  - i. thermal expansion in solids, liquids and gases
  - ii. the unusual expansion of water and its effects
- d. explain the following:
  - i. expansion in terms of particle behaviour
  - ii. effects and applications of thermal expansion

#### **20.3.2.4 Topic: Pressure**

In this topic, candidates should be able to:

- a. define pressure
- b. state the following:
  - i. SI units of pressure
  - ii. Pascal's principle of transmission of pressure in fluids
- c. explain Archimedes' principle
- d. describe the following:
  - i. pressure exerted by solids
  - ii. applications of pressure in fluids
  - iii. pressure exerted by liquids

- iv. effects of atmospheric pressure
- v. applications of Archimedes' principle and relative density
- vi. an experiment to verify Archimedes' principle
- e. carry out an experiment to verify factors that affect pressure exerted by liquids and solids
- f. solve problems involving pressure exerted by solids
- g. derive the formula  $p = \rho gh$
- h. solve problems involving pressure exerted by liquids using the formula
- i. work out problems on atmospheric pressure
- j. solve problems involving pressure
- k. solve problems involving Archimedes' principle and the law of floatation

#### **20.3.2.5 Topic: Gas Laws**

In this topic, candidates should be able to:

- a. state gas laws
- b. explain the following:
  - i. gas laws using the kinetic theory of gases
  - ii. applications of gas laws
- c. describe how a manometer works
- d. solve problems involving gas laws
- e. carry out an experiment to verify gas laws ..

#### **20.3.3 Core Element: Mechanics**

##### **20.3.3.1 Topic 1: Scalar and Vector Quantities**

In this topic, candidates should be able to:

- a. define scalar and vector quantities
- b. represent vector quantities in magnitude and direction
- c. add and subtract vectors - parallelogram and triangle rules
- d. applying vector addition and subtraction in finding resultant displacement and force
- e. resolve vectors into their horizontal and vertical components
- f. solve problems involving vectors

##### **20.3.3.2 Topic: Linear Motion**

In this topic, candidates should be able to:

- a. describe the following:
  - i. distance, displacement, speed, velocity and acceleration
  - ii. acceleration of a body under free-fall near the earth
- b. plot graphs of linear motion for the following:
  - i. displacement/distance against time.
  - ii. speed/velocity against time
- c. interpret graphs of linear motion for the following:
  - i. displacement/distance against time

- ii. speed/velocity against time
- d. determine the acceleration due to gravity by using a simple pendulum
- e. calculate the distance travelled from speed/velocity-time graph.
- f. apply the equations of uniformly accelerated motion

#### **20.3.3.3 Topic: Work and energy**

In this topic, candidates should be able to:

- a. state the energy-work theorem
- b. explain the conservation of mechanical energy
- c. calculate work done by a force
  - i. acting in the direction of motion
  - ii. acting at an angle to the horizontal direction of motion
- d. solve problems related to work and energy

#### **20.3.3.4 Topic: Machines**

In this topic, candidates should be able to:

- a. explain mechanical advantage, velocity ratio and efficiency of a machine
- b. describe what machines are
- c. calculate mechanical advantage, velocity ratio and efficiency of a machine

#### **20.3.3.5 Newton's laws of motion**

In this topic, candidates should be able to:

- a. state Newton's three laws of motion
- b. describe the following:
  - i. Newton's three laws of motion
  - ii. inertia
  - iii. the law of conservation of linear momentum
- c. derive the equation  $F = ma$
- d. solve problems involving Newton's laws of motion

#### **20.3.3.6 Frictional force**

In this topic, candidates should be able to:

- a. describe applications of frictional force
- b. calculate the frictional force using normal force (horizontal planes only,  $F = \mu N$ )

#### **20.3.3.7 Terminal velocity**

In this topic, candidates should be able to:

- a. explain terminal velocity
- b. describe the following:
  - i. falling of objects in a vacuum and in fluids

- ii. qualitatively the motion of bodies with constant weight falling with and without air resistance (including reference to terminal velocity)
- iii. factors that affect falling objects

#### **20.3.3.8 Hooke's law**

In this topic, candidates should be able to:

- a. explain the following:
  - i. effects of force
  - ii. the significance of the term limit of proportionality for an elastic solid.
- b. verify Hooke's law experimentally
- c. plot extension-load graphs for an elastic spring within the elastic limit
- d. interpret extension-load graphs for an elastic spring within the elastic limit
- e. apply Hooke's law in solving related problems

#### **20.3.3.9 Uniform circular motion**

In this topic, candidates should be able to:

- a. differentiate angular displacement and angular velocity
- b. describe the following:
  - i. the relationship between tangential (linear) velocity and angular velocity
  - ii. simple experimentations to illustrate centripetal force
  - iii. applications of circular motion in everyday life
- c. solve problems involving uniform circular motion

#### **20.3.3.10 Moments of forces**

In this topic, candidates should be able to:

- a. state the principle of moments for a body in equilibrium
- b. describe the following:
  - i. moment of a force
  - ii. the relationship between force and torque
- c. carry out an experiment to verify the principle of moments using pivots and objects
- d. apply principle of moments in everyday life
- e. determine centre of mass in lamina and uniform rods

### **20.3.4 Core element: Electricity and magnetism**

#### **20.3.4.1 Current electricity**

In this topic, candidates should be able to:

- a. define the internal resistance of a cell
- b. explain electrical hazards and safety (earthing, fuses, overloading, miniature circuit breakers (MCBs), dampness, insulation and short circuit)
- c. describe the following:
  - i. electric current
  - ii. potential difference

- iii. electrical resistance
- iv. electric power and energy
- v. the three pin plug
- d. carry out experiments on the following:
  - i. factors affecting electrical resistance
  - ii. to verify Ohm's law
- e. solve problems using the equation  $I = \frac{Q}{t}$
- f. calculate resistance using ohm's law
- g. work out the resistance of resistors using colour codes and standard notation
- h. solve problems using the relationship  $E = V + Ir$
- i. determine experimentally the effect of resistors in series and parallel circuits
- j. calculate the net resistance of resistors connected in series and parallel circuits
- k. determine electric currents and voltages in parallel and series circuits
- l. derive and use the equations:  $P = VI$ ,  $P = I^2R$ ,  $P = \frac{V^2}{R}$  and  $E = Pt$
- m. calculate the cost of electrical energy

#### **20.3.4.2 Magnetism and Electromagnetism**

In this topic, candidates should be able to:

- a. state the following:
  - i. factors that affect magnitude and direction of the induced emf
  - ii. the laws of electromagnetic induction (Faraday's law and Lenz's law – descriptive, no equations)
- b. explain the following:
  - i. the working of an alternating current (ac) and direct current (dc) generators
  - ii. environmental impact of power generation and transmission (hydro, nuclear, fossil fuels, solar, geothermal energy and biomass)
- c. describe the following:
  - i. the working of a dc motor
  - ii. magnetisation and demagnetisation
  - iii. electromagnetism
  - iv. the working of a transformer and power transmission
  - v. magnetic fields of current-carrying conductors
    - straight wire
    - loop
    - solenoid
  - vi. the force on current-carrying conductor in a magnetic field of a bar magnet
  - vii. Fleming's left-hand rule
- d. apply Fleming's left-hand rule
- e. solve mathematical problems involving transformers

**20.3.4.3 Introduction to digital electronics**

In this topic, candidates should be able to:

- a. identify electric circuits symbols for electronic devices (capacitors, inductors, light dependent resistors, diodes, transistors, light emitting diodes(LEDs), photovoltaic cell, logic gates, thermistors)
- b. explain the following:
  - i. the difference between intrinsic and extrinsic semiconductors
  - ii. the operation of a *P-N* junction diode
  - iii. characteristics of analogue and digital signals
- c. describe the following:
  - i. the Band Theory
  - ii. doping of semiconductors (*N*-type and *P*-type)
  - iii. uses of the electronic devices
  - iv. analogue and digital circuits
  - v. the application of diode in half-wave and full-wave rectification
  - vi. the basic structure and operation of a bipolar transistor (*N-P-N*)
  - vii. how a light operated switch works
  - viii. the operations of basic logic gates (AND gate, OR gate, NOT gate, NOR gate, NAND gate)
- d. construct the truth tables of the logic gates

**20.3.5 Core element: Oscillations and Waves**

**20.3.5.1 Oscillations and waves**

In this topic, candidates should be able to:

- a. define oscillation
- b. differentiate between a transverse wave and longitudinal wave
- c. explain amplitude, displacement, period and frequency of an oscillating system using pendulum or a hanging mass on a spring
- d. explain following characteristics of a wave:
  - amplitude
  - frequency
  - velocity
  - period
  - phase
  - wavelength
- e. describe the following:
  - i. a wave
  - ii. wave front
  - iii. following wave properties:
    - reflection
    - refraction (including refractive index)
    - diffraction
    - interference

- f. carry out experiment on factors affecting frequency of an oscillating system (pendulum, loaded spring, cantilever)
- g. derive the relation  $v = f\lambda$
- h. solve problems involving the wave equation  $v = f\lambda = \lambda/T$

#### **20.3.5.2 Sound**

In this topic, candidates should be able to:

- a. explain the following:
  - i. transmission of sound in gases, liquids and solids
  - ii. factors affecting the speed of sound
- b. describe the following:
  - i. experimentations to show that sound is produced by vibrating bodies
  - ii. loudness and pitch in terms of wave amplitude and frequency
  - iii. free vibrations, forced vibrations, natural frequency and resonance
  - iv. propagation of sound as a series of compressions and rarefactions
  - v. an experiment to determine experimentally the speed of sound in air
- c. solve problems involving velocity of sound

#### **20.3.5.3 Electromagnetic waves**

In this topic, candidates should be able to:

- a. state sources of electromagnetic waves
- b. explain the properties of electromagnetic waves
- c. describe the following:
  - i. electromagnetic spectrum
  - ii. methods of detecting electromagnetic waves
  - iii. applications of electromagnetic wave
- d. apply wave equation in solving problems concerning electromagnetic waves

#### **20.3.5.4 Light and Lenses**

In this topic, candidates should be able to:

- a. state similarities and differences of a camera and a human eye
- b. explain the following:
  - i. image formation by converging lens
  - ii. image formation in the human eye
- c. describe the following:
  - i. converging and diverging lenses
  - ii. image formation using ray diagrams
  - iii. parts of optical devices (camera, projector, telescope) and their functions
  - iv. defects of vision in the human eye and how they can be corrected
  - vi. applications of lenses in various optical devices, (simple camera, telescope and slide projector)
- d. derive the lens formula

- e. solve problems involving converging lenses using lens and magnification formulae
- f. determine the focal length of a converging lens experimentally using a distant object, mirror method and graphical method
- g. draw ray diagrams to locate position and size of an image formed by a camera and projector

### **20.3.6 Core element: Nuclear physics**

#### **20.3.6.1 Isotopes**

In this topic, candidates should be able to:

- a. define isotopes
- b. explain how one element may have a number of isotopes using nuclide notation
- c. describe the nuclear structure of an atom
- d. represent the nucleus using the nuclear notation

#### **20.3.6.2 Radioactivity**

In this topic, candidates should be able to:

- a. define the following:
  - i. radioactivity
  - ii. nuclear fission and fusion
- b. state dangers of radioactive emissions
- c. explain ways of detecting radioactive emissions
- d. describe the following:
  - i. natural and induced radioactivity
  - ii. types of radiations
  - iii. half-life of isotopes
  - iv. safe ways of handling and storing radioactive materials
  - v. the applications of radioactivity:
    - nuclear power generation
    - agricultural/biochemical tracers
    - industrial
    - medical (radiotherapy)
    - sterilization/food preservation
    - radio carbon dating
- e. solve problems involving half-life of isotopes
- f. balance nuclear equations (fission and fusion)

### **20.4 ASSESSMENT FORMAT**

The examination shall consist of two papers and these shall be examined as follows:

#### **20.4.1 Paper I (Free Response Test 2 hours)**

This is a theory paper that has:

- a. **thirteen** compulsory structured questions which shall be answered in the spaces that shall be provided after each question on the same question paper

- b. **two** sections, **A** and **B**
- c. section **A** with **10** short answer questions worth **70** marks
- d. section **B** with **3** essay questions worth **30** marks
- e. use of non-programmable calculators shall be allowed
- f. the paper has a total of **100** marks

#### **20.4.2 Paper II (Practical Test 2 hours)**

This is basically a practical paper that has

- g. **four** compulsory questions of **10** marks each.
- h. **two** sections **A** and **B**.
- i. section **A** with **two** descriptive questions.
- j. section **B** with **two** questions that requires candidates to carry out experiments.
- k. the paper has a total of **40** marks, each question carrying **10** marks.
- l. use of non-programmable calculators shall be allowed.

#### **20.5 PERFORMANCE GRADE DESCRIPTORS**

PASS	CREDIT	DISTINCTION
<p>Candidates at this achievement level should be able to:</p> <ol style="list-style-type: none"> <li>1. read scales</li> <li>2. follow instructions</li> <li>3. recall facts/concepts</li> <li>4. draw and label graphs and diagrams</li> <li>5. compare and contrast scientific concepts</li> <li>6. observe and record findings</li> <li>7. give meanings of scientific notations</li> <li>8. interpret basic diagrams</li> <li>9. use basic formulae</li> <li>10. partially classify information</li> </ol>	<p>In addition to competencies under pass, candidates at this achievement level should be able to:</p> <ol style="list-style-type: none"> <li>1. interpret diagrams/graphs</li> <li>2. properly classify scientific concepts</li> <li>3. apply scientific laws and principles</li> <li>4. partially explain facts</li> <li>5. describe scientific concepts</li> <li>6. describe experiments</li> <li>7. convert one unit to another</li> <li>8. properly manipulate apparatus</li> <li>9. derive formulae and units</li> </ol>	<p>In addition to competencies under pass and credit, candidates at this achievement level should be able to:</p> <ol style="list-style-type: none"> <li>1. demonstrate proper organizational skills</li> <li>2. present facts logically</li> <li>3. explain facts comprehensively</li> <li>4. outline procedures</li> <li>5. analyse information</li> <li>6. balance equations</li> <li>7. identify chemicals using flow diagrams</li> <li>8. draw conclusions</li> <li>9. carry out mathematical calculations</li> <li>10. synthesize concepts</li> </ol>

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## **21.1 MSCE RELIGIOUS AND MORAL EDUCATION EXAMINATION SYLLABUS**

### **21.1 INTRODUCTION**

The Malawi Schools Certificate of Education Religious and Moral Education examination syllabus is there to assist teachers and learners to prepare effectively for the national examinations. It's a tool which when used together with the teaching syllabus shall guide candidates on expectations of examiners as they approach the subject during national examinations

### **21.2 AIMS OF THE SYLLABUS**

The following are the aims of MSCE Religious and Moral Education syllabus:

- a. To demonstrate an understanding of the nature and role of religion and morality in society.
- b. To demonstrate an understanding of beliefs about the nature of God, creation of people and the universe in different religions.
- c. To showcase an understanding of different forms of sacred communication.
- d. To show an understanding of moral values and teachings in different religions.
- e. To demonstrate an understanding of the contribution of religion to development.

### **21.3 ASSESSMENT OBJECTIVES**

#### **21.3.1 Core element: Religion and development**

##### **21.3.1.1 Topic: Religion and development**

In this topic, candidates should be able to:

- a. identify the contributions of the society to an individual according to the teachings of the three major religions in Malawi
- b. state ways through which the three major religions in Malawi act as agents of development
- c. discuss the following:
  - i. contributions of the society to an individual according to the teachings of the three major religions in Malawi
  - ii. ways through which the three major religions in Malawi act as agents of development

##### **21.3.1.2 Topic: Religious teachings on contemporary issues**

In this topic, candidates should be able to:

- a. define contemporary issues
- b. identify the following:
  - i. teachings of Christianity, Islam and ATRs on preservation of the environment
  - ii. teachings of the three major religions in Malawi on population control
- c. discuss the teachings of the three major religions in Malawi on preservation of the environment
- d. give teachings of Christianity, Islam and ATRs on population control

**21.3.1.3 Topic: Religious teachings on the conservation of the environment**

In this topic, candidates should be able to:

- a. state ways of overcoming the challenges of the initiatives of the three major religions in Malawi on the conservation of the environment
- b. identify the following:
  - i. the initiatives of Christianity, Islam and ATRs on the conservation of the environment
  - ii. successes and challenges of the initiatives of the three major religions in Malawi on the conservation of the environment
- c. discuss the following:
  - i. the initiatives of the three major religions in Malawi on the conservation of the environment
  - ii. successes of the initiatives of the three major religions in Malawi on the conservation of the environment
  - iii. challenges of the initiatives of the three major religions in Malawi on the conservation of the environment

**21.3.1.4 Topic: Religious teachings on drug and substance abuse**

In this topic, candidates should be able to:

- a. identify the following:
  - i. the teachings of the three major religions in Malawi on drug and substance abuse
  - ii. the initiatives of the three major religions in Malawi on rehabilitation of people who abuse drugs and substances
- b. state the effects of drug and substance abuse on the family
- c. give the effects of drug and substance abuse on the society
- d. list the effects of drug and substance abuse on religion
- e. mention the effects of drug and substance abuse on an individual
- f. explain the similarities of the teachings of Christianity and Islam on drug and substance abuse
- g. differentiate the teachings of Islam and ATRs on drug and substance abuse
- h. discuss the
  - i. effects of drug and substance abuse on an individual, family and society
  - ii. effects of drug and substance abuse on religion
  - iii. the initiatives of the three major religions in Malawi on rehabilitation of people who abuse drugs and substances

**21.3.1.5 Topic: Religious teachings on conflict resolution**

In this topic, candidates should be able to:

- a. give causes of religious conflicts
- b. identify the following:
  - i. teachings of the three major religions in Malawi on conflict resolution
  - ii. the initiatives by the three major religions in Malawi on conflict resolution

- c. discuss the teachings of the three major religions in Malawi on conflict resolution
- d. discuss the following:
  - i. religious conflicts
  - ii. ways of resolving religious conflicts
  - iii. the initiatives by the three major religions in Malawi on conflict resolution

**21.3.1.6 Topic: Influence of culture on the three major religions in Malawi**

In this topic, candidates should be able to:

- a. state the causes of conflicts between religion and culture
- b. list the conditions necessary for social and religious harmony
- c. identify the following:
  - i. influence of culture on the three major religions in Malawi
  - ii. teachings of the three major religions in Malawi on natural resources
  - iii. religious teachings about human dependence on natural resources as a gift from God
- d. discuss the following:
  - i. the influence of culture on the three major religions in Malawi
  - ii. conditions necessary for social and religious harmony
  - iv. teachings of the three major religions in Malawi on natural resources
  - v. religious teachings about human dependence on natural resources as a gift from God
- e. explain the following:
  - i. what the three major religions in Malawi can do on the influence of culture
  - ii. causes of conflicts between religion and culture

**21.3.1.7 Topic: Religious teachings on gender by the three major religions**

In this topic, candidates should be able to:

- a. mention the following:
  - i. teachings of Islam, Christianity and ATRs on inheritance in relation to gender
  - ii. teachings of the three major religions in Malawi on prejudice and discrimination
- b. identify the following:
  - i. teachings of the three major religions in Malawi on dependence, interdependence and independence in relation to gender
  - ii. the teachings of Christianity on inheritance in relation to gender
- c. discuss the following:
  - i. teachings of the three major religions in Malawi on dependence, interdependence and independence in relation to gender
  - ii. teachings of ATR on inheritance in relation to gender
  - iii. teachings of the three major religions in Malawi on prejudice and discrimination
- d. explain the teachings of Islam on inheritance in relation to gender

**21.3.2 Core element: Moral values and teachings**

**21.3.2.1 Topic: Moral values in the three major religions in Malawi**

In this topic, candidates should be able to:

- a. identify the following:
  - i. moral values in Christianity
  - ii. moral values in ATRs
  - iii. similarities of moral values in Christian and Islam
- b. give moral values in Islam
- c. differentiate the moral values in Christianity and ATR
- d. describe moral values in the three major religions in Malawi
- e. classify the moral values in the three major religions in Malawi into personal, social and global perspectives
- f. analyse the impact of mass media on morality

**21.3.2.2 Topic: Death rituals performed in the three major religions in Malawi**

In this topic, candidates should be able to:

- a. mention death rituals in Christianity
- b. state death rituals in Islam
- c. identify death rituals in ATRs
- d. explain death rituals in Christianity, Islam and ATRs
- e. discuss the following:
  - i. religions and moral significance of death rituals in Christianity, Islam and ATRs
  - ii. rituals associated with life after death in Christianity, Islam and ATRs

**21.3.2.3 Topic: Religious diversity and tolerance**

In this topic, candidates should be able to:

- a. define the term 'religious diversity'
- b. identify situations where unity in religious diversity is required
- c. discuss the following:
  - i. the importance of tolerance in religious diversity at family level
  - ii. the importance of tolerance in religious diversity at global level
  - iii. situations where unity in religious diversity is required
- d. explain the importance of tolerance in religious diversity at national level

**21.3.3 Core element: Concepts of Religion and its moral dimension**

**21.3.3.1 Topic: Moderation and self control as taught in the three major religions in Malawi**

In this topic, candidates should be able to:

- a. identify the teachings of the three major religions in Malawi on:
  - i. self control
  - ii. moderation
- b. give the importance of self control as taught in the three major religions in Malawi

- c. explain the importance of self control as taught in the three major religions in Malawi
- d. discuss the teachings of the three major religions in Malawi on
  - i. moderation
  - ii. self control

**21.3.3.2 Topic: Religious teachings on co-existence, transformation and tolerance**

In this topic, candidates should be able to:

- a. mention ways through which the three major religions in Malawi bridge the gap between the rich and the poor in society
- b. identify religious teachings on the following:
  - i. co-existence among religions
  - ii. transformation among religions
  - iii. tolerance among religions
- c. identify the following:
  - i. situations through which the three major religions in Malawi promote co-existence, transformation and tolerance
  - ii. needs of the poor
- d. discuss the following:
  - i. ways through which the three major religions in Malawi promote co-existence, transformation and tolerance
  - ii. ways through which Christianity, Islam and ATRs addresses the issues of evil and suffering and wealth and poverty
  - iii. ways through which the three major religions in Malawi bridge the gap between the rich and the poor in society
  - iv. needs of the poor
- e. explain situations through which the three major religions in Malawi promote co-existence, transformation and tolerance

**21.3.4 Core element: Awareness of God**

**21.3.4.1 Topic: Functions of spirits in the three major religions in Malawi**

In this topic, candidates should be able to:

- a. give the functions of spirits in Islam
- b. mention the functions of spirits in ATR
- c. identify the functions of spirits in Christianity
- d. explain the relation between the Supreme being and the spirit in Islam
- e. discuss the following:
  - i. functions of spirits in Christianity, Islam and ATRs
  - ii. the relation between the Supreme being and the spirit in Christianity
  - iii. the relation between the Supreme being and the spirit in ATR

#### **21.3.4.2 Topic: Functions of saints, angels and good ancestral spirits**

In this topic, candidates should be able to:

- a. define each of the following terms: saints, angels and good ancestral spirits
- b. explain the functions of angels in Islam
- c. discuss functions of the following:
  - i. Saints and angels in Christianity
  - ii. good ancestral spirits in ATRs

#### **21.3.5 Core element: Communication with God in religions**

##### **21.3.5.1 Topic: Intermediaries in Christianity, Islam and ATRs**

In this topic, candidates should be able to:

- a. mention the following:
  - i. intermediaries in Christianity
  - ii. intermediaries in ATRs
- b. identify the roles of intermediaries in Christianity and ATRs
- c. explain roles of intermediaries in Christianity and ATRs
- d. classify intermediaries according to each of the three major religions in Malawi

#### **21.4 ASSESSMENT FORMAT**

- a. The subject shall have **one** examination paper with **three sections**, namely **A, B and C**.
- b. Section **A** shall have **twenty** multiple choice questions. Each question shall carry **1 mark** giving a total of **20 marks**.
- c. Section **B** shall have **five** free response short answer questions. Each question shall carry **10 marks** giving a total of **50 marks**.
- d. Section **C** shall have **three** structured essay questions and candidates shall answer any **two**. Each question shall carry **15 marks** giving a total of **30 marks**.
- e. The paper shall have a total of **100 marks**
- f. Time allowed for the paper shall be **2 hours**.

#### **21.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
Candidates are able to demonstrate the following abilities:	Candidates show all skills under <b>pass</b> and in addition, the following skills:	Candidates show all skills under <b>credit</b> and in addition, the following skills:
1. Answer recall questions on religion 2. Answer some questions in at least two religions 3. Come up with facts	1. Answer low order questions on religion in general 2. Articulate teachings of the three major religions in	1. Answer higher order questions including those on morality and contemporary issues 2. Come up with required number of facts 3. Exound facts when it comes to

without expounding them 4. Barely demonstrate application and analytical skills	Malawi 3. Demonstrate application and analytical skills in at least two religions 4. Express themselves in an essay question though with challenges	comparing and contrasting teachings of the three major religions in Malawi 4. Express themselves in logical order 5. Express themselves using good vocabulary 6. Demonstrate analytical skills in essay questions
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## **22.0 MSCE SOCIAL AFFAIRS EXAMINATION SYLLABUS**

### **22.1 INTRODUCTION**

The Social Affairs MSCE syllabus is designed to improve candidates' understanding of contemporary issues and enable them make rational decisions for the good of the country so that they spearhead the development of the country in a culturally diverse and democratic society in an interdependent world. It is also intended to provide candidates with the opportunity to develop skills and motivation to function efficiently and effectively in the society. This shall help them to lead responsible and productive lives.

### **22.2 AIMS OF THE SYLLABUS**

The syllabus aims are to enable candidates to:

1. Make informed decisions about their personal health and sexuality and demonstrate health-seeking behaviour in the community and wider environment, with particular attention to hygiene, sanitation and prevalent diseases
2. Demonstrate an understanding of peoples' culture and interaction in terms of social, economic, political and gender issues
3. Demonstrate an understanding of the society and economy as well as acquire entrepreneurship skills for continued development of Malawi, Africa and the world.
4. Demonstrate an understanding of the issues of human rights, democracy, governance, civic, social justice, peaceful co-existence, social services and other emerging issues in relation to development
5. Promote an understanding of global issues in terms of the tensions between national interests and global priorities and how those result in change in societies
6. Develop their self-esteem and self-awareness and appreciate how growth and development affect their behaviour and interpersonal relationships as well as acquire skills needed to deal with challenges associated with growing up

### **22.3 ASSESSMENT OBJECTIVES**

#### **22.3.1 Core Element: People and the Environment**

##### **22.3.1.1 Topic: Blood Donation**

Candidates should be able to:

- a. mention expectations of a blood donor
- b. describe qualities of a blood donor
- c. explain the following:
  - i. the importance of donating blood
  - ii. what happens to donated blood
  - iii. the benefits of receiving blood

**22.3.1.2 Topic: Use and Abuse of Prescribed Drugs**

Candidates should be able to:

- a. identify types of prescribed drugs
- b. mention suitable persons who can prescribe drugs
- c. explain the following:
  - i. the importance of using prescribed drugs according to instructions
  - ii. causes of drug and substance abuse
- d. describe the effects of drug and substance abuse on the individual and family
- e. analyse the impact of drug and substance abuse on development

**22.3.1.3 Topic: Non-Communicable Diseases**

Candidates should be able to:

- a. identify types of non-communicable diseases
- b. explain ways of preventing non-communicable diseases

**22.3.1.4 Topic: Sexually Transmitted Infections and HIV and AIDS**

Candidates should be able to:

- a. define stigma and self-discrimination in the context of HIV and AIDS
- b. identify groups of people that are vulnerable to HIV and AIDS
- c. list rights of people living with HIV and AIDS
- d. state the importance of the following:
  - i. caring for STI including HIV and AIDS patients
  - ii. hospital based and home based care for STI including HIV and AIDS patients
- e. name institutions that deal with guidance and counselling of HIV and AIDS patients and guardians
- f. describe the following:
  - i. impact of HIV and AIDS on the individual, family, community and the nation
  - ii. responsibilities of people living with HIV and AIDS
  - iii. methods used in guidance and counselling in HIV and AIDS
- g. explain the following:
  - i. ways of caring for people living with HIV and AIDS (PLWHA)
  - ii. how stigma contributes to the spread of HIV
  - iii. the importance of accessing HIV testing and counselling (HTC)
- h. discuss ways of avoiding contracting STIs including HIV and AIDS when caring for patients
- i. analyse the consequences of lack of guidance and counselling in HIV and AIDS

**22.3.1.5 Topic: Effects of Sexual Identity, Sexual Health and Reproduction and Sexualisation on Behaviour**

Candidates should be able to:

- a. identify skills that can be used to overcome the challenges of sexuality

- b. describe sexual identity, sexual health and reproduction and sexualisation as components of sexuality
- c. explain how components of sexuality affect human behaviour

**22.3.1.6 Topic: Sexual Reproductive Health and Human Behaviour**

Candidates should be able to:

- a. explain ways of avoiding reproductive health challenges
- b. analyse reproductive health challenges which young people experience
- c. examine skills that can be used to overcome reproductive health related challenges

**22.3.1.7 Topic: Sexual Harassment**

Candidates should be able to:

- a. state the importance of reporting cases of incest, rape, sexual harassment, intergenerational and transactional sex
- b. identify skills that can be used to help victims of incest, rape, sexual harassment, intergenerational and transactional sex
- c. explain the effects of incest, rape, sexual harassment, intergenerational and transactional sex

**22.3.1.8 Topic: Population Change**

Candidates should be able to:

- a. describe characteristics of population change
- b. explain the effects of population growth in a country
- c. analyse the effects of population decline

**22.3.1.9 Topic: Population Policy**

Candidates should be able to:

- a. state practices that affect the implementation of the population policy in Malawi
- b. identify the following:
  - i. key elements of population policy of Malawi
  - ii. programmes for implementing the Malawi population policy
- c. describe ways of eradicating the practices that negatively affect the implementation of the population policy in Malawi
- d. discuss strategies for the implementation of population policy in Malawi
- e. analyse the factors that influenced the development of population policies in Malawi

**22.3.1.10 Topic: Population Growth**

Candidates should be able to

- a. define the term “population control”
- b. identify ways in which nature controls population growth
- c. describe ways in which human beings can control population
- d. discuss the benefits of controlling population growth

**22.3.1.11 Topic: Disaster Risk Management**

Candidates should be able to:

- a. define the terms ‘disaster risk, and disaster risk management’
- b. identify common disasters affecting Malawi
- c. describe the effects of disasters on individuals, communities and nations
- d. explain the following:
  - i. types of disasters
  - ii. advantages of managing disasters risks over managing disasters
- e. discuss preventive and mitigation measures of different types of disasters

**22.3.1.12 Topic: Responsible Parenthood**

Candidates should be able to:

- a. define the term ‘responsible parenthood’
- b. describe qualities of responsible parenthood

**22.3.2 Core Element: Culture and Change**

**22.3.2.1 Topic: Western and Eastern Cultures**

Candidates should be able to:

- a. identify different cultures and religions
- b. explain the influence of culture on religion
- c. analyse case studies on the impact of western and eastern cultures on Malawian and African culture

**22.3.2.2 Topic: Cultural Preservation**

Candidates should be able to:

- a. define the terms ‘cultural preservation and cultural heritage’
- b. state the importance of preserving culture
- c. describe the following:
  - i. strategies used to preserve culture
  - ii. constraints faced in the process of preserving culture
- d. explain the relationship between culture and development

**22.3.2.3 Topic: Prejudice and Discrimination**

Candidates should be able to:

- a. identify the causes of prejudice and discrimination
- b. explain the relationship between prejudice and discrimination
- c. examine the effects of prejudice and discrimination

**22.3.2.4 Topic: Gender issues in Malawi**

Candidates should be able to:

- a. identify the following:

- i. laws and policies that are gender biased in Malawi
- ii. gender issues in Malawi
- b. state laws and policies that have been revised to ensure gender equality and gender equity in Malawi
- c. name institutions in Malawi that promote gender equity and gender equality
- d. describe conventions on gender in Malawi
- e. analyse case studies on ways of achieving gender balance in Malawi

#### **22.3.2.5 Topic: Gender and Development**

Candidates should be able to:

- a. define the term 'gender platform of action'
- b. describe the following:
  - i. indicators of gender balance
  - ii. the importance of gender balance in development
- c. analyse the role of gender platform of action in promoting gender balance

#### **22.3.2.6 Topic: Gender issues in Africa**

Candidates should be able to:

- a. identify gender issues in Africa
- b. describe conventions on gender in Africa
- c. explain the effects of gender bias on development
- d. analyse case studies on ways of achieving gender balance in Africa

#### **22.3.2.7 Topic: Courtship and Marriage**

Candidates should be able to:

- a. define the terms 'Courtship' and 'marriage'
- b. identify the following:
  - i. different ways of courtship
  - ii. factors which help to preserve marriage
- c. state the importance of courtship
- d. explain the following:
  - i. factors to consider when choosing a marriage partner
  - ii. factors that promote good marriage relationship
- e. describe the following:
  - i. different ways through which people enter into marriage
  - ii. ways in which people should prepare for marriage
- f. discuss the importance of marriage

#### **22.3.2.8 Topic: Multiculturalism**

Candidates should be able to:

- a. define the term 'multiculturalism'
- b. describe the following:

- i. factors that enhance multiculturalism
- ii. positive and negative impact of multiculturalism
- c. explain the impact of multiculturalism on development

**22.3.2.9 Topic: Discrimination**

Candidates should be able to:

- a. define the term 'discrimination'
- b. describe factors that contribute to discrimination
- c. explain the effects of discrimination
- d. discuss the efforts being put in place to curb discrimination
- e. analyse cases of discrimination

**22.3.2.10 Topic: Morals and Values**

Candidates should be able to:

- a. identify the following:
  - i. personal, family and community morals and values
  - ii. national and international values
- b. state social and ethical values for international life
- c. describe the following:
  - i. how morals and values are eroded
  - ii. appropriate ways of dealing with moral dilemmas
  - iii. the importance of social and ethical values for international cooperation
- d. explain ways of promoting family and community values

**22.3.2.11 Topic: Social and Moral Responsibilities**

Candidates should be able to:

- a. identify factors that influence peaceful co-existence
- b. explain types of relationships in one's community and country
- c. describe social and moral responsibilities of citizens in a community and country
- d. examine the needs of citizens in a community and country
- e. analyse factors that affect relationships in the community

**22.3.2.12 Topic: Cultural Practices, Gender, and HIV and AIDS**

Candidates should be able to:

- a. identify the following:
  - i. cultural practices that place vulnerable people at risk of contracting HIV and AIDS
  - ii. different ways of supporting vulnerable people
- b. describe the following:
  - i. steps to be followed in order to assist abused individuals
  - ii. different cultural practices that help to mitigate the spread of HIV
- c. explain ways in which people living with HIV and AIDS (PLWHA) can be supported
- d. discuss the following:
  - i. different ways of discouraging the cultural practices that facilitate the spread of HIV

- ii. challenges faced when dealing with cultural practices that promote the spread of HIV
- e. analyse the following:
  - i. gender practices that promote the spread of HIV in the country and the world
  - ii. challenges that can arise between people living with HIV and AIDS and caregivers

### **22.3.3 Core Element: Sustainable Development**

#### **22.3.3.1 Topic: Employment**

Candidates should be able to:

- a. define the term ‘pension’
- b. state different types of pension
- c. mention the procedures that are involved in the ‘contributory pension scheme’
- d. identify the key provisions in the Pension Act
- e. describe the following:
  - i. difference between defined benefits and defined contribution pension scheme
  - ii. conditions for accessing pension benefits
  - iii. rights and responsibilities of pension beneficiaries
- f. explain the conditions in transferring pension benefits
- g. discuss the importance of pension scheme

#### **22.3.3.2 Topic: Development**

Candidates should be able to:

- a. identify the following:
  - i. aspects of development
  - ii. factors that contribute to ‘political development’ ‘social development’ ‘economic development’ and ‘technological development’
  - iii. countries that are technologically advanced
- b. state the importance of development to a nation
- c. describe indicators of development
- d. explain how aspects of development affect the lives of people
- e. analyse social development initiatives in the community

#### **22.3.3.3 Topic: Socio-Economic Problems**

Candidates should be able to:

- a. define the terms socio-economic problems, devaluation and over-indebtedness
- b. describe the following:
  - i. causes and effects of devaluation
  - ii. causes and effects of over-indebtedness
- c. explain the roles of credit reference bureaus in controlling over-indebtedness

**22.3.3.4 Topic: Interdependence in the Ecosystem**

Candidates should be able to:

- a. identify cases of interdependence among people, living things and non-living things in the ecosystem
- b. explain how people, living and non-living things depend on each other

**22.3.3.5 Topic: People and the Environment**

Candidates should be able to analyse the effects of positive and negative attitudes towards the environment

**22.3.3.6 Topic: Sustainable Development**

Candidates should be able to:

- a. define the term 'sustainable development'
- b. describe essential conditions for sustainable development
- c. discuss the importance of sustainable development
- d. analyse case studies on national and international sustainable development initiatives

**22.3.3.7 Topic: Developing Nations**

Candidates should be able to:

- a. define the term 'developing nation'
- b. identify donor countries to Malawi
- c. describe common characteristics of developing nations
- d. explain development challenges facing Malawi
- e. analyse the role of donors in developing nations

**22.3.3.8 Topic: International Labour Laws**

Candidates should be able to:

- a. identify key elements of the international labour laws
- b. describe international labour agreements
- c. discuss the importance of international labour laws

**22.3.3.9 Topic: Economic Policies**

Candidates should be able to:

- a. define the term 'economic policy' and 'economic sustainability'
- b. describe the following:
  - i. different types of economic policies
  - ii. roles of citizens in economic sustainability
- c. explain indicators of economic sustainability
- d. discuss the importance of economic policies for a developing nation

**22.3.3.10 Topic: Personal Finances**

Candidates should be able to:

- a. define the term ‘personal finances’
- b. describe ways of managing personal finances

**22.3.3.11 Topic: Financial Institutions**

Candidates should be able to:

- a. define the terms ‘financial institution’ ‘market forces’
- b. identify financial institutions in Malawi
- c. describe the following:
  - i. services offered by financial institutions
  - ii. rights of financial service consumers
  - iii. procedure in lodging a complaint against a financial institution
- d. explain the following:
  - i. factors that hinder prospective customers from accessing financial services
  - ii. how market forces affect the financial industry
- e. discuss the challenges that people face when dealing with financial institutions in Malawi
- f. analyse the contributions of financial institutions to the development of Malawi

**22.3.3.12 Topic: Business Values and Ethics**

Candidates should be able to:

- a. define the term “business values” and “ethics”
- b. identify business values and ethics
- c. describe corrupt practices in business
- d. explain business (corporate) social responsibility
- e. discuss life skills that can be applied to prevent one from engaging in corruption in business

**22.3.3.13 Topic: Managing a Business Venture**

Candidates should be able to:

- a. identify key issues in financial management
- b. describe qualities of a successful business person
- c. discuss practical taxation issues in business
- d. explain different types of taxes to be paid in business

**22.3.3.14 Topic: Risk taking and Creativity in Business**

Candidates should be able to:

- a. define the term ‘risk taking in business’
- b. state the importance of creativity in business
- c. describe the skills for mitigating business risks
- d. explain possible risks in business

**22.3.3.15 Topic: Job Searching Strategies**

Candidates should be able to describe job seeking strategies

**22.3.3.16 Topic: Saving Culture**

Candidates should be able to

- a. define the term saving culture
- b. state the importance of saving culture
- c. describe different ways of saving

**22.3.4 Core Element: Growth and Personal Development**

**22.3.4.1 Topic: Self esteem**

Candidates should be able to

- a. identify factors affecting self-esteem
- b. state the importance of valuing one's role in the society
- c. explain ways of building one's self esteem

**22.3.4.2 Topic: Time Management**

Candidates should be able to

- a. state the importance of time management
- b. explain ways of managing time effectively

**22.3.4.3 Topic: Career Planning**

Candidates should be able to

- a. identify sources of information about career and vocation
- b. state the importance of seeking vocational guidance and counselling
- c. describe the following:
  - i. factors to consider when planning a career
  - ii. ways of preparing for job interviews

**22.3.4.4 Topic: Challenges associated with Adolescents**

Candidates should be able to:

- a. describe the following:
  - i. ways of coping with peer pressure
  - ii. skills needed for proper decision making and problem solving
- b. explain influence of media on adolescent behaviour
- c. discuss the following:
  - i. forms of peer pressure
  - ii. impact of peer pressure on interpersonal relationships
- d. analyze the following:
  - i. situations that require decision making and problem solving
  - ii. sources of information about the challenges associated with adolescents

**22.3.5 Core Element: Global issues and Development**

**22.3.5.1 Topic: Global issues and challenges**

Candidates should be able to:

- a. identify global challenges faced in the 21<sup>st</sup> century
- b. explain the efforts being made to deal with global issues and challenges
- c. discuss the implications of global issues and challenges on development

**22.3.5.2 Topic: World Cooperation**

Candidates should be able to:

- a. identify areas of world cooperation
- b. mention the prominent personalities that have contributed in facilitating world cooperation
- c. describe the following:
  - i. factors that foster world cooperation
  - ii. international interventions to promote and preserve world cooperation
- d. discuss the importance of world cooperation

**22.3.6 Core Element: Civic Participation and Development**

**22.3.6.1 Topic: Rights of Special Groups**

Candidates should be able to:

- a. describe the rights of special groups
- b. discuss the following:
  - i. the importance of protecting the rights of special groups
  - ii. cases of human rights violations for special groups
- c. analyse ways of promoting social justice and fairness for special groups

**22.3.6.2 Topic: Public Space and Human Rights**

Candidates should be able to:

- a. define the term “public space”
- b. identify the rights that are exercised in public space
- c. explain the roles and responsibilities of citizens in public space
- d. describe the role of civil society organisations and religious organisations in promoting rights in public space
- e. analyse case studies in relation to public space

**22.3.6.3 Topic: International Conventions on Human Rights**

Candidates should be able to:

- a. describe conventions for protecting human rights for special groups
- b. describe institutions that deal with human rights for special groups

**22.3.6.4 Topic: Taxation**

Candidates should be able to:

- a. define the terms ‘tax exemption’ ‘tax incentives’ and ‘tax agreement’

- b. identify the following:
  - i. institutions responsible for taxes
  - ii. different forms of tax exemptions and incentives
- c. state the importance of registering for tax
- d. describe the following:
  - i. challenges of revenue collection that affect sustainable development
  - ii. stages followed in formulating and changing taxes
- e. Explain the following:
  - i. process of registering for tax
  - ii. how different taxes are collected
- f. discuss the following:
  - i. tax offences and penalties
  - ii. the importance of tax audit
  - iii. the importance of declaring and paying correct amount of tax
- g. analyse the importance of keeping business records for tax purposes
- h. examine the following:
  - i. role of taxation in development
  - ii. impact of tax agreement on national development

#### **22.3.6.5 Topic: Government**

Candidates should be able to:

- a. describe the role of the state
- b. analyse systems of government

#### **22.3.6.6 Topic: Government of Malawi**

Candidates should be able to:

- a. describe the following:
  - i. composition of the government of Malawi
  - ii. compositions and functions of 'central government' and 'local government'
  - iii. functions of statutory corporations in Malawi
- b. explain the following:
  - i. how the 'central government' and 'local government' source revenue
  - ii. ways through which statutory corporations source revenue

#### **22.3.6.7 Topic: Good Governance**

Candidates should be able to:

- a. identify principles of good governance
- b. describe roles of various institutions that enhance good governance

#### **22.3.6.8 Topic: Elections**

Candidates should be able to:

- a. describe the electoral process in Malawi
- b. explain the role of voters in the electoral process
- c. analyse the duties and functions of the Electoral Commission

**22.3.6.9 Topic: Peaceful Coexistence**

Candidates should be able to:

- a. identify forms of violence in the home, school, and community
- b. describe ways of preventing violence in the home, school and community
- c. explain principles of peaceful coexistence

**22.3.6.10 Topic: International Conflicts**

Candidates should be able to:

- a. describe causes of international conflicts
- b. explain the effects of international conflicts on development
- c. analyse case studies on international conflicts

**22.3.6.11 Topic: International Peace Initiatives**

Candidates should be able to:

- a. identify international peace initiatives
- b. explain the successes and failures of international peace initiatives

**22.3.6.12 Topic: Refugee Crises in Africa and the World**

Candidates should be able to:

- a. define the terms 'refugee', 'asylum seeker', and 'stateless person'
- b. identify areas of refugee concentration in the world
- c. explain the challenges faced in the implementation of conventions for the protection of refugees and stateless persons
- d. discuss the impact of refugees in the world
- e. examine the conventions for the protection of refugees and stateless persons

**22.3.6.13 Topic: Security**

Candidates should be able to:

- a. define the term 'security'
- b. describe the roles of the army in the provision of security
- c. explain the roles of the police in the provision of internal security
- d. discuss the importance of security in the country

**22.3.6.14 Topic: Corruption and the Law**

Candidates should be able to:

- a. describe the following:
  - i. establishment of the Anti-Corruption Bureau
  - ii. functions of the Anti-Corruption Bureau (ACB)
- b. explain the roles of the public in curbing corruption

**22.3.6.15 Topic: Social injustice**

Candidates should be able to:

- a. identify organisations that promote social justice internationally
- b. explain the following:
  - i. causes of social injustice in Africa
  - ii. role of international organisations in promoting social justice
- c. discuss the importance of promoting social justice in the world
- d. analyse the following:
  - i. successes and failures of international organisations that promote social justice
  - ii. case studies of social injustice in selected African countries

**22.3.6.16 Topic: Social Services**

Candidates should be able to:

- a. define the term 'community participation' in the provision of social services
- b. identify ways of mobilising community participation in the provision and care for social services
- c. explain the following:
  - i. how the provision and care for social services contribute to economic development in selected African countries
  - ii. the need for safeguarding the environment in the provision of social services
  - iii. how critical issues in the provision of social services affect development
- d. discuss the following:
  - i. critical issues related to the provision of social services
  - ii. work of renowned people in the provision of social services
- e. analyse the following:
  - i. provision and care for social services in selected African countries
  - ii. case studies on the need for caring for social services

**22.3.6.17 Topic: Climate Change**

Candidates should be able to describe the socio-economic impact of climate change

**22.3.6.18 Topic: Unions and Associations**

Candidates should be able to:

- a. identify unions and associations for citizens
- b. explain the roles of unions and associations
- c. discuss the benefits of joining unions and associations

**22.3.6.19 Topic: International Organisations that foster development**

Candidates should be able to:

- a. identify international organisations that foster development
- b. describe types of development work which international organisations undertake

### **22.3.6.20 Topic: National Service**

Candidates should be able to:

- a. define the term 'national service'
- b. explain ways in which citizens can participate in national service activities
- c. discuss the importance of national service
- d. analyse case studies on national service

## **22.4 ASSESSMENT FORMAT**

Candidates shall be required to sit the following papers for specified durations.

### **22.4.1 Paper I: Multiple Choice Test 1 Hour**

- a. The paper shall have fifty test item covering the whole syllabus and testing all assessment objectives
- b. 30 test items shall be from Social Studies and 20 test items shall be from Life skills
- c. Each question shall carry 1 mark giving a total of **50 Marks**
- d. There shall be **no** question choice
- e. The allowed time for the paper shall be 1 hour.

### **22.4.2 Paper II: Free Response Test 2 Hours**

- a. The paper shall have **two** sections, **A** and **B**.
- b. Section **A** shall have 7 compulsory questions requiring short answers for **70** marks. 4 questions shall come from Social Studies and 3 questions from Life Skills, each question shall carry **10** marks.
- c. Section **B** shall have **two** compulsory essay questions, **one** question from Social Studies and the other from Life Skills.
- d. Each question in section **B** shall carry **15** marks.
- e. The total marks for the paper shall be **100**.
- f. Candidates shall use the spaces provided on the question paper to write answers.
- g. The allowed time for the paper shall be **2** hours.

## **22.5 PERFORMANCE GRADE DESCRIPTORS**

<b>PASS</b>	<b>CREDIT</b>	<b>DISTINCTION</b>
1. Recalling of information 2. Some understanding of concepts	Show all the skills under <b>pass</b> and in addition, the following skills should be displayed 1. Understanding of concepts 2. Partial expression of ideas	Show all the skills under <b>credit</b> and in addition, the following skills should be displayed 1. Application and analysis 2. Logical presentation of facts 3. Ability to relate ideas of concepts

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## **23.0 MSCE TECHNICAL DRAWING EXAMINATION SYLLABUS**

### **23.1 INTRODUCTION**

The MSCE Technical Drawing syllabus is designed to equip the student to demonstrate the ability to present ideas graphically in a creative and innovative way using appropriate media and technology. The student should also be able to read and interpret drawings in geometrical shapes, engineering and built environment. Upon completion of MSCE Technical Drawing course, the student should be able to demonstrate the ability to: draw in either first or third angle orthographic projection, measure a length accurately to 0.5 mm and an angle to 0.5 degrees, produce working drawings in accordance BS 308 engineering and produce pictorial drawings in Isometric and Oblique projections

### **23.2 AIMS OF THE SYLLABUS**

Technical drawing is a language for the engineering and built environment. The aims are to enable candidates to demonstrate:

- a. effective graphic communication skills for the transfer of vocational and entrepreneurial knowledge, skills, attitudes and values towards excellence in draftsmanship
- b. imagination and creativity towards the application of scientific and technological skills for personal and national economic development

### **23.3 ASSESSMENT OBJECTIVES**

#### **23.3.1 Core element: Drawing**

##### **23.3.1.1 Topic: Enlargement and reduction of similar plane figures**

In this topic, candidates should be able to:

- a. draw a plane figure whose sides are increased or decreased in a given ratio
- b. draw a plane figure similar to a given figure whose length has been increased or decreased in one direction only
- c. draw a plane figure similar to a given figure whose area is proportional to the given figure

##### **23.3.1.2 Topic: Circles and tangents**

In this topic, candidates should be able to:

- a. construct a circle to touch two given circles internally and externally
- b. construct a circle to pass through three given points
- c. construct a circle to touch a given circle and a given straight line
- d. construct a circle to pass through a given point and touch two given straight lines
- e. construct a circle to pass through two given points and touch a given circle

**23.3.1.3 Topic: Parabola**

In this topic, candidates should be able to:

- a. construct a parabola when given span and height (in a rectangle)
- b. determine directrix and focus of a parabola
- c. construct a parabola as a locus when given directrix and a focus
- d. construct a tangent and a normal at a point on the parabola

**23.3.1.4 Topic: Hyperbola**

In this topic, candidates should be able to:

- a. construct a hyperbola given asymptotes
- b. construct a hyperbola given coordinate, vertex and transverse axis
- c. construct a hyperbola given the directrix, focus and eccentricity

**23.3.1.5 Topic: Computer aided drawing (CAD)**

In this topic, candidates should be able to:

- a. produce basic geometric figures in 2D e.g. triangles, quadrilaterals, polygons, circles and other figures
- b. produce orthographic views in 1<sup>st</sup> angle or third angle orthographic projection

**23.3.2 Core element: Drawing/application of drawing**

**23.3.2.1 Topic: Ellipse**

In this topic, candidates should be able to:

- a. construct an ellipse using string and two pins method
- b. construct an ellipse as a locus given its eccentricity
- c. construct a tangent and a normal at any point on an ellipse and from a point outside an ellipse
- d. apply principles of construction of ellipses to engineering and built environment designs

**23.3.2.2 Topic: Loci**

In this topic, candidates should be able to:

- a. plot the path traced by a point on moving parts (link mechanisms) eg simple connecting rod joining piston and crankshaft
- b. plot the path traced by a point on moving objects eg sliding ladders, pendulum
- c. construct the following loci
  - cycloid
  - Archimedian spiral
  - involute of a circle
  - helix
- d. construct tangents and normals to cycloid, archimedean spiral and involute of a circle
- e. use principles of loci to construct single start square screw thread
- f. use principles of loci to construct square and round section springs

### **23.3.3 Core element: Application of drawing**

#### **23.3.3.1 Topic: Engineering drawing**

In this topic, candidates should be able to:

- a. write abbreviations of engineering terms according to BS 308
- b. draw conventional representation of engineering components according to BS 308
- c. sketch the following engineering components:
  - fasteners
  - coil springs
  - locking devices
  - screw threads
- d. produce drawings in 1<sup>st</sup> or 3<sup>rd</sup> angle orthographic projection of engineering components to scale
- e. produce drawings in 1<sup>st</sup> or 3<sup>rd</sup> angle orthographic projection with full sections, part sections, half sections and revolved sections
- f. produce standard drawings of bolts, nuts, set screws and studs according to BS 308
- g. produce views of assembled engineering components drawn in 1<sup>st</sup> or 3<sup>rd</sup> angle orthographic projection
  - hatchsectioned views of assembled components
  - draw title block
  - indicate projection symbols
  - insert main dimensions
  - indicate scale used

#### **23.3.3.2 Topic: Building drawing**

In this topic, candidates should be able to:

- a. draw building symbols according to BS 1192
- b. produce simple drawings of:
  - location plans
  - site plans and
  - building plans (floor plans)
- c. draw sectional views of buildings
- d. draw elevations of buildings

### **23.3.4 Core element: Reading and interpretation of drawing**

#### **23.3.4.1 Topic: Orthographic drawing of prisms and pyramids**

In this topic, candidates should be able to:

- a. draw orthographic views of prisms and pyramids
- b. draw orthographic views of prisms cut by planes perpendicular or/and inclined to the Horizontal Plane (HP) and Vertical Plane (VP):
  - triangular, square and rectangular
  - polygonal-based
  - cylindrical

- c. draw orthographic views of the following pyramids cut by planes perpendicular or/and inclined to the HP and VP:
  - triangular, square and rectangular
  - polygonal-based
  - conical
- d. draw true shape of the cut surfaces

#### **23.3.4.2 Topic: Orthographic views of lines (lines in space)**

In this topic, candidates should be able to:

- a. draw orthographic views of a straight line inclined to both HP and VP
- b. determine:
  - true length of a line
  - its true angle to the HP
  - its true angle to the VP
  - its traces given its projection

#### **23.3.5 Core element: Reading and interpretation of drawing/ Application of drawing**

##### **23.3.5.1 Topic: Pictorial and orthographic projection**

In this topic, candidates should be able to:

- a. convert isometric and oblique views into 1<sup>st</sup> or 3<sup>rd</sup> angle orthographic projection
- b. produce third view when given any two views in 1<sup>st</sup> or 3<sup>rd</sup> angle orthographic projection
- c. produce the following projection of sections of solids on an auxiliary plane:
  - cylinders, cones, prisms and pyramids
  - simple engineering components (castings and brackets)
- d. produce views in isometric projection with circles, curves and slanting faces
- e. produce views in oblique projection with circles and curves on one face and slanting faces
- f. draw engineering components in isometric and oblique projections eg brackets and housings

##### **23.3.5.2 Topic: Development and interpenetration**

In this topic, candidates should be able to:

- a. draw developed surfaces of the following prisms and pyramids:
  - triangular, square and rectangular
  - polygon-based
  - cylindrical
  - conical
- b. draw developed surfaces of the following truncated prisms and pyramids:
  - triangular, square and rectangular
  - polygonal-based
  - cylindrical
  - conical

- c. determine the line of intersection between any combination of the following solids meeting at right angles including offset: prisms; cylinders; right cones; right pyramids
- d. determine the line of intersection between inclined cylinders in the same plane
- e. determine the line of intersection in mouldings e.g. cranks; levers; connecting rods
- f. determine the line of intersection in engineering designs e.g. watering cane; funnel; pipes; pail and produce the development of parts of the designs

### **23.4 ASSESSMENT FORMAT**

The MSCE Technical Drawing examinations shall have **three** papers.

#### **23.4.1 Paper I (Geometrical)**

- a. Time allowed for the paper shall be **2 hours 40 minutes** (**10 minutes** is reading time).
- b. A3 drawing papers shall be provided and used by candidates as answer sheets.
- c. The paper shall have **two** sections, **A** and **B**.
- d. Section **A** shall have **4** questions worth **20** marks each, while section **B** shall have **4** questions worth **20** marks each.
- e. Only **five** questions shall be answered by candidates giving a total of **100** marks.
- f. Not more than **three** questions must be chosen from one section of the paper.

#### **23.4.2 Paper II (Engineering)**

- a. Time allowed for the paper shall be **2 hours 40 minutes** (**10 minutes** is reading time).
- b. A3 drawing papers shall be provided and used by candidates as answer sheets.
- c. The paper shall have **two** questions.
- d. Question **one** shall have **15** marks and question two shall have **85** marks giving a total of **100** marks.

#### **23.4.3 Paper III (Coursework)**

- a. This paper shall be a coursework to be done in the last **two** years of secondary education.
- b. The coursework shall be available for assessment **four** weeks before commencement of MSCE examinations.
- c. The paper shall have **five** drawings.
- d. The drawings shall be as follows:
  - **Two** on geometrical
  - **One** on engineering
  - **One** on building
  - **One** on Auto CAD
- e. Each drawing shall have **20** marks giving a total of **100** marks.

### **23.5 PERFORMANCE GRADE DESCRIPTORS**

Candidates shall be awarded grades upon demonstration of the competences in the table below.

PASS	CREDIT	DISTINCTION
Candidates are able to demonstrate the following abilities: a. construct basic geometrical shapes b. draw some basic conventional diagrams c. sketch basic engineering components and symbols d. draw basic assemblies of components e. do basic hatching	Candidates show all skills under pass and in addition, the following skills: a. show different types of lines in some drawings b. construct some application questions c. draw well labeled conventional drawing symbols d. draw engineering and assembly drawings e. show some hidden details f. produce basic geometric shapes in 2D using computer	Candidates show all skills under credit and in addition, the following skills: a. draw complex engineering drawings b. show most hidden details and centre lines c. interpret and draw abstract drawings such as lines in space, auxiliary views and plans for buildings d. draw to standard according to BS 308 and BS 1192 e. correctly assemble engineering components f. correctly hatch the assembled parts g. high quality of assemble parts h. produce orthographic views in 2D using computer

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## **24.0 MSCE WOODWORK EXAMINATION SYLLABUS**

### **24.1 INTRODUCTION**

This examination syllabus has been designed to equip students with prerequisite knowledge and skills to apply analytical, research, technological, entrepreneurial, critical thinking and vocational skills in a creative and innovative way. This helps the students to identify problems and develop their appropriate solutions for self-reliance and national development.

### **24.2 AIMS OF THE SYLLABUS**

The aims of this syllabus have been drawn from the core element and rationale for woodwork as stipulated in the teaching syllabus for MSCE Woodwork. This syllabus therefore intends to:

- a. demonstrate practical and intellectual skills in production of wooden artifacts
- b. demonstrate entrepreneurial knowledge and skills
- c. exhibit knowledge and apply it to the sustainable development of the natural and physical environment
- d. demonstrate innovative and creative ways of solving problems that affect the society
- e. demonstrate skills in construction and principles of design and drawing
- f. demonstrate an understanding of material science and apply it when handling material

### **24.3 ASSESSMENT OBJECTIVES**

#### **24.3.1 Core Element: Material Science**

##### **24.3.1.1 Topic: Growth, Structure and Identification of Timber**

In this topic candidates should be able to

- a. classify trees as exotic or indigenous
- b. describe the following:
  - i. function of each part on the cross section of tree
  - ii. grain structure of different timber
- c. discuss the growth of exotic and indigenous timber

##### **24.3.1.2 Topic: Seasoning and Mechanical Properties of Timber**

In this topic candidates should be able to

- a. name methods of testing moisture content in timber
- b. define moisture content in timber
- c. discuss the following:
  - i. the importance of seasoning timber
  - ii. methods of seasoning timber
  - iii. advantages and disadvantages of various methods of seasoning timber
  - iv. methods of testing for mechanical strength of timber
- d. explain the following:
  - i. the behavior of timber during seasoning
  - ii. mechanical strength of timber

- e. calculate the moisture content percentage in seasoned timber
- f. illustrate different methods of seasoning timber

#### **24.3.1.3 Topic: Tree Conservation**

In this topic candidates should be able to

- a. define the following:
  - i. afforestation in woodwork
  - ii. deforestation in woodwork
- b. discuss the following:
  - i. causes of deforestation in woodwork
  - ii. advantages of forests in woodwork
  - iii. effects of deforestation in woodwork
  - iv. effects of climate change in woodwork

#### **24.3.1.4 Topic: Defects in Timber**

In this topic candidates should be able to

- a. define a natural defect
- b. classify artificial and natural defects in timber
- c. discuss the following:
  - i. causes of timber defects
  - ii. ways of preventing timber defects
- d. sketch and label different timber defects

#### **24.3.1.5 Topic: Timber Preservation**

In this topic candidates should be able to

- a. define timber preservation
- b. explain two forms of fungal attack
- c. discuss the following:
  - i. main groups of insects which causes damage to timber
  - ii. the importance of preserving timber
  - iii. ways of preserving timber from both insects and fungal attacks
  - iv. methods of applying preservatives
- d. describe ways in which timber can be damaged

#### **24.3.1.6 Topic: Manufactured Boards**

In this topic candidates should be able to

- a. define veneering
- b. discuss the following:
  - i. methods of cutting veneers
  - ii. products of veneers
  - iii. properties of manufactured boards
  - iv. advantages of manufactured boards over solid timber
  - v. the application and uses of different types of boards

**24.3.2 Core Element: Drawing and Design**

**24.3.2.1 Topic: Design Process**

in this topic candidates should be able to

- a. print letters and numbers
- b. determine the following:
  - i. scale to be used
  - ii. the correct symbol of projection to be used
- c. producing freehand sketches of solution solving a given problem
- d. evaluate and select the best solution to a problem
- e. draw the following:
  - i. an exploded view to show how components join each other in assembly
  - ii. either in first or third angle an orthographic projection showing all dimension
- f. produce a cutting list and costing
- g. select appropriate materials and type of finish to be used

**24.3.3 Core Element: Construction and Equipment**

**24.3.3.1 Topic: Special Purpose Tools**

In this topic candidates should be able to

- a. name different types of special purpose tools
- b. discuss the uses of special purpose tools
- c. sketch and label parts of special purpose tools
- d. describe maintenance of special purpose tools like sharpening and setting of saw teeth

**24.3.3.2 Topic: Machines**

In this topic candidates should be able to

- a. name and label different parts of machines
- b. discuss machine safety precautions
- c. explain the following:
  - i. correct use of each machine
  - ii. proper storage of power tools
  - iii. the importance of using correct speed when operating lathe machines
  - iv. the importance of using appropriate tools when turning wood
- d. describe the following:
  - i. preparation of materials for mounting on a machine
  - ii. lathe operations e.g. turning between centers, face turning and hollowing

**24.3.4 Core Element: Entrepreneurship**

**24.3.4.1 Topic: Entrepreneurship**

In this topic candidates should be able to

- a. define marketing in woodwork
- b. discuss the following:

- i. customer needs in woodwork
- ii. the 4P's of entrepreneurship in woodwork
- iii. customer care in woodwork
- iv. costing and pricing methods in woodwork
- c. price woodwork products to include VAT

#### **24.3.5 Core Element: Material Science**

##### **24.3.5.1 Topic: Wood Adhesives**

In this topic candidates should be able to

- a. define terminologies related to adhesives e.g. pot life, shelf life
- b. discuss the uses of adhesives
- c. select suitable adhesives for different situations
- d. explain safety precautions when handling adhesives
- e. describe the following:
  - i. properties of wood adhesives
  - ii. methods of preparing adhesives e.g. animal glue, epoxy resin
  - iii. methods of application of adhesives

##### **24.3.5.2 Topic: Wood Finishes**

In this topic candidates should be able to

- a. define wood finish
- b. identify suitable finishes for surfaces
- c. explain the importance of applying finishes
- d. describe the following:
  - i. ways of preparing suitable finishes
  - ii. application of finishes to finished wood products

##### **24.3.5.3 Topic: Fittings**

In this topic candidates should be able to

- a. name different fittings
- b. state functions of various cabinet fittings
- c. discuss different types of cabinet fittings
- d. classify fittings
- e. describe preparation of position for fittings
- f. fix cabinet fittings e.g. locks, bolts, hinges, catches and castor wheels

#### **24.3.6 Core Element: Drawing and design**

##### **24.3.6.1 Topic: Design Process**

In this topic candidates should be able to

- a. make the following:
  - i. different types of joints
  - ii. different types of shaping
- b. assemble members or parts

**24.3.7 Core Element: Construction and Equipment**

**24.3.7.1 Topic: Upholstery**

In this topic candidates should be able to

- a. define the term upholstery
- b. describe upholstery materials and tools
- c. select appropriate upholstery material
- d. design and cut out patterns
- e. construct skeletons

**24.3.7.2 Topic: Basic Roof Forms**

In this topic candidates should be able to

- a. mention types of roofs
- b. define roof terminology e.g. span, run, slope, rise, pitch, ridge, rafter and valley
- c. discuss roof covering materials
- d. name the correct types of material and sizes used for roof construction
- e. select roof covering materials
- f. calculate the correct rise and span of the roof
- g. make a basic roof form e.g. lean-to-roof, mono-pitch roof and gable-end roof

**24.3.8 Core Element: Entrepreneurship**

**24.3.8.1 Topic: Entrepreneurship**

In this topic candidates should be able to

- a. describe the following:
  - i. management of employees in woodwork e.g. recruitment, training and development, motivation and labour laws
  - ii. financial resource management in woodwork
  - iii. asset management in woodwork
- b. plan woodwork business activities

**24.4 ASSESSMENT FORMAT**

The examination is set to test the candidates' skills in drawing and design, practical work, knowledge of tools and materials, understanding of principles of construction, vocational and entrepreneurial skills.

The subject shall have **three** papers that shall be taken by the candidates.

**24.4.1 Paper I**

- a. The paper shall have **three** sections, **A**, **B** and **C**.
- b. **Section A** shall comprise short answer questions, **section B** shall comprise restricted essay questions and **section C** shall have closed free response questions on drawing and design.
- c. **Section A** shall have **five** questions of **6** marks each worth **30** marks, **section B** shall have **three** questions of **15** marks each where only **two** questions shall be answered

giving a total of **30** marks and section **C** shall have two questions of **20** marks each giving a total of **40** marks.

#### **24.4.2 Paper II (Practical)**

- a. This paper shall have only **one** question.
- b. The question shall be of **100** marks.

#### **24.4.3 Paper III (course work)**

- a. The paper shall have **three** projects
- b. The project shall be on:
  - i. stool or table construction
  - ii. flat frame construction
  - iii. carcase construction
  - iv. iron monger and finishing processes in all construction
  - v. design folder for each project
- c. Each project shall have **30** marks giving a total of **90** marks.

**N.B 20 marks for project and 10 marks for folder design**

### **24.5 PERFORMANCE GRADE DESCRIPTORS**

PASS	CREDIT	DISTINCTION
<p>Candidates are able to demonstrate the following abilities:</p> <ul style="list-style-type: none"> <li>a. answer all recall questions</li> <li>b. partial interpretation of diagrams</li> <li>c. produce at least one idea from a given design problem</li> <li>d. draw simple orthographic and isometric views</li> <li>e. measure some parts satisfactorily</li> <li>f. do most hand processes</li> <li>g. do simple machine processes</li> </ul>	<p>Candidates show all skills under pass and in addition the following skills:</p> <ul style="list-style-type: none"> <li>a. make well labeled diagrams</li> <li>b. answer comprehension questions clearly</li> <li>c. produce two ideas from a given design problem</li> <li>d. include some attachments necessary for the workability of the design</li> <li>e. measure parts correctly</li> <li>f. show some mastery of machine and hand processes</li> </ul>	<p>Candidates show all the skills under credit and in addition, the following skills:</p> <ul style="list-style-type: none"> <li>a. answer application questions where designing is required</li> <li>b. describe processes logically</li> <li>c. make well labeled and neat sketches</li> <li>d. draw isometric and orthographic views of the adopted idea clearly</li> <li>e. demonstrate mastery of machine and hand processes</li> </ul>

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