INFORMATION TECHNOLOGY

Dear Grade 12 IT learner

Information technology is the study of the components of a computer system such as hardware and software. In IT, you are also asked to design programs that can solve problems. What you have learned in the last three years in IT will benefit you in the current world driven by information.

Subject Requirements
- Computer
- Programming and Office software
- Textbooks – for IT theory and programming

Content Checklist
Below is a checklist you should use to ensure that you have covered the Grade 12 IT content in full.

Practical Examination (Paper 1) 150 marks
- This is a practically oriented paper covering questions on solution development
- It will assess the practical skills of the programming language and includes interaction with a database
- The paper will cover the broad topics of
  - Basic programming skills
  - Integrated data-aware and SQL solutions
  - Object orientated programming
  - General and advanced problem solving
- All graphical user interfaces will be provided
- You will receive two pages and reading time for your planning – use this time wisely and ensure you make the most of the time allocated to you.

Theory Examination (Paper 2) 150 marks
System Technologies (Hardware and Software)
- Factors affecting overall performance of computer systems
- How the CPU functions in terms of the machine cycle
- The motherboard and its components and focussing on how data flows between these components
- The concept of modular design in terms of expansion cards and memory modules
- Different types of memory and how memory is managed. Terms including virtual memory, thrashing, buffering, spooling and caching
- Operating systems. Processing techniques, multi-tasking, multi-threading and multi-processing.
- Mobile computers like smartphones, tablets etc.

Communication Technologies and Network Technologies
- The different forms of electronic communication and their implications. How to protect information: techniques such as encryption, passwords, user access rights and privileges, digital signatures and certificates, security protocols such as SSL.
- The role of Internet services and supporting technologies, including cloud computing.
- Networks: types of network, their structure, security and communication between components in terms of switching techniques and protocols.

Data and Information Management
- Representation and classification of data and information
- Database design for use in information-driven ICT systems
- DBMS software and its purpose.

Social Implications
- Effects of the use of computers.
- Ethical issues relating to the use of computers, intellectual property rights, availability of information, information overload, capabilities and limitations of ICTs, computers providing solutions to issues of national and international importance, consequences of search engines and how ICTs impact on careers.

Solution Development
- Design of classes and their presentation in the form of class diagrams.
- Appropriate assigning of data types.
- Providing an algorithmic solution to a problem.
- Testing and tracing an algorithm.
- Application of the principles of human computer interaction to design functional user interfaces.

Assessment
- You have 50% of the total for this subject in your hands before you enter the examination room in October through School-based assessment (25%) and the PAT (25%). This includes:
- **Term 1**: Theory test **50 marks**
  Alternative task **50 marks**
- **Term 2**: Practical test **50 marks**
  June examination **(P1-150; P2-150)**
- **Term 3**:
  Preparatory examinations: Practical examination **150 marks**
  Theory examination **150 marks**
- **PAT**: January to August, **150 marks**
  divided into 3 phases:
  - **Phase 1**: Planning and designing
  - **Phase 2**: Implementation (coding)
  - **General**: Whole PAT evaluation
  - Ensure you frequently work on PAT for maximum marks

Tips for Success
- At the heart of the theory paper is the major topic "System Technologies". Know this section extremely well.
- The work you put into Phase 2 of the PAT will add value to your preparation for the theory question on "Solution Development".
- The skill of building on given/existing code.

Work through past examination papers.
- At the heart of the theory paper is the major topic "System Technologies". Know this section extremely well.
- The work you put into the PAT will help you understand and apply some key concepts, which is testedin your practical paper.
- The skill of building on given/existing code will be very important for the Practical Exam.

SCAN ME!
IT Overview

Examination papers and suggested answers of previous years are available on: ePortal