**Courtesy: WAEC**

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**PRINTING CRAFT PRACTISE**

 **EXAMINATION SCHEME**

There will be three papers, Papers 1, 2 and 3 all of which must be taken. Papers 1 and 2 will be a composite paper to be taken at one sitting.

Paper 1: will consist of forty multiple-choice objective questions all of which are to be answered in 45 minutes for 40 marks.

Paper 2: will consist of five essay questions. Candidates will be required to answer **any four** in 1½ hours for 60 marks.

Paper 3: will be a practical test of 1 hour duration. It will consist of two practical questions out of which candidates will be required to answer one for 100 marks.

**A list of materials for the test shall be made available to schools not less than two weeks before the paper is taken for material procurement and relevant preparations.**

 ALTERNATIVE TO PRACTICAL TEST

 Alternatively, in the event that materials for the actual practical test cannot be acquired, the Council may consider testing theoretically, candidates’ level of acquisition of the practical skills prescribed in the syllabus. For this alternative test, there will be two sets of questions both of which must be answered in 2 hours for 100 marks.

**DETAILED SYLLABUS**

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| **S/NO.** | **CONTENT** | **NOTES** |
| 1 | Introduction to the Art of Printing | (i) Art of Definition, explanation of printing.(ii) Importance, products advantages and uses.(iii) Printing in Nigeria-Survey Press,Federal Government Press,RailwayPress,Daily Timesand other Press Houses.(iv) Copyright law,History - Origin,Chinese,JohanGutenberg.The role of Hope Waddel and  Henry Townsend (1846 – 1926) and  (1926 – 1960).(v) Printing and Career – Importance, Careers,         e.g. Lithography machine minders, etc.(vi) Printing Processes, description         materials/tools/equipment – letter press/relief         printing; offset/lithography; Gravure/intaglio,        screen, stencil/flexography. |
| 2 | Workshop safety and maintenance | (i) Technical workshops for printing – types e.g.          lithographyand machine room.(ii) Safety in the workshop – precautions, air-        condition, electrical and lightings, dark rooms,         machine rooms.(iii) Safety in the Binding and Print finishing, safety         in the hot metal composition room.(iv) Maintenance of machines, tools and         equipment in the Printing workshop,                 Enumerate the procedures. |
| 3 | Letter Assembly(a) Hand Composition(b) Design for Printing(c) Mechanical Composition(d) Photo-composition | Identification e.g. Tools and facilities.Explanation in simple Principles and terminologies, techniques, structures and parts of types.Identification of type faces and typography.The concepts of basic design and instrument.Description and listing of differences between monotype and linotype; accessories and their uses.(i) Equipment/tools, accessories.(ii) Meaning: principles and components(iii) Advantages. |
| 4 | (a) Print Finishing(b) Binding materials, tools        and equipment(c) Binding(d) Pamphlet(e) Perfect binding(f) Edition binding(g) Loose sheet binding(h) Warehouse | (i) Meaning, importance,etc(ii) Types and processes e.g. Edition case binding         and loose leaves.(iii) Technical Terms.(iv) Materials and accessories.(i) Materials – e.g. sewing- thread and leathers.(ii) Bone-folders and guillotine.(iii) Papers and boards.(i) Types: book, pamphlet, padding, edition case,         loose – sheet, perfect binding.(ii) Processes.Importance, explanation, description and processes, e.g. cutting, stitching, etc.Concept, importance and processes.Differences between perfect binding and other types.Explanation.Edition binding materials and their usages.Distinguish between edition binding and others.Description, operational outline and materials, tools and equipment.(i) Define warehouse.(ii) Identification and uses of types of printing         materials e.g. paper and board, ink, chemicals,         printing surfaces, sizes, substances , grammageetc.(iii) Stock and inventory control. |
| 5 |  Screen printing(1) Frame/stencil making | (i) Origin of screen printing(ii) Preparation and methods -wooden frame, mesh (silk), hand-made         stencil with card board; stencil using block out         method.(iii) Stretching of the mesh on the frame.(iv) Materials and tools – frame mesh, shoulder joint, glue and nails,squeegee,wax,paint,sponge, cardboard, oil base or water free ink. |
| (a) Print(b) Photographic screen         making(c) Image Reproduction | Making print using stencil with attention on         registration marks and different colours. (i) Coating of the screen with sensitized solution.  (ii) Exposure of the screen with the gelatin  solution in suitable source of light anddevelopment with water.(iii) Identification and uses of the following         materials – silk or organdie gelatin coating,         dichromate, positive image, board light source,         tracing paper, black light source, tracing         paper, black paint (Opaque).(i) Transferring of image from the mesh/stencil to         the substrate, e.g. paper, sticker, plastic, etc.(ii) The use of enlarger and Kodaklith translucent        printing paper. |
| 6 | Lithography – Process Camera Work (1) Planning -(a) Work Ticket(b) Layout Planning |  Preparation, interpretation and uses.(i) Definition of lithography and layout planning(ii) The procedure and uses of the layout planning         in chronological order, e.g. identification of         griper margin, image area, folds and gutter        margins.(iii) Materials – Negative/Positive flats, masking         tape/brown paper, etc. Tools and equipment and their uses: Light         table, stripping knife, etc.(iv) Identification of Negative/Positive e.g.         emulsion and non-emulsion side. |
|  | (2) Film making/Process camera Plate making | (i) Definition, qualities, functions and safety rules          of darkroom.(ii) Equipment and materials for film making. e.g.          chemicals, original art work, (different type)          funnels, developing-sink/tray, mixing tools,          pail.etc. Process camera; Digital Colour Separation          Machine.(iii) Types of films and their characteristic,  Panchromatic films,Orthocromatic film, Laser films.(iv) Chemicals – Developer; fixatives and stop          bath; and their uses.         Preparation and preservation of films.         Effect of safe-light on films. Description of plate making equipment and          their uses. e.g. plate processor, developing          sink, exposure/frame vacuum, etc.Materials – Pre-sensitised plates, gum, arabic.The process of making corrections and          preservation of plates and safety procedures. |
| 7 |  Machine Printing(i) Offset Machine Printing | (i) Techniques of offset printing(ii) Spare parts and maintenance procedures            e.g. lubrication, bearings, rollers            setting, etc.(iii) Brief history of offset lithographic machine.(iv) Configuration of lithographic machine.(v) Plate and adjustment in correcting image            position on the sheet during the printing            process.(vi) Functions of the important parts of the pressand its running.       (vii) Major units of a lithographic printing machine            and their functions. |
| (ii) Relief Printing(iii) Gravure Printing        (Intaglio)(iv) Flexographic Printing | (i) History; explanation; principles and types of         relief printing.(ii) Important parts and maintenance.(iii) Method and schemes of imposition.(iv) Types of image carrier.(v) Tools and Materials- Chase, Quoin, Solvents, Oils, etc.(i) History, explanation, principles and types of             Gravure Image Carrier.(ii) Products and advantages/disadvantages.(i) Definition and concept of flexography and its        image carrier.(ii) Differences between flexography printing and        other machine printing.(iii) The importance of flexographic printing to         packaging industry e.g. cellophane and         pharmaceutical industry.(iv) Products- cellophane bags, pharmaceutical         and food packing products. |
|  8 | Legal Aspects of the  Printing Industry | (i) Trade houses in the printing industry and their         activities e.g. Employers Association;         Professional Bodies, Training Institutions,         Examination Bodies and other Foreign Trade         House.(ii) Copyright |

**LIST OF FACILITIES AND MAJOR EQUIPMENT/MATERIALS REQUIRED**

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| ITEM NO | EQUIPMENT | QUANTITY REQUIRED |
|  1. | Vacuum Frame |  2 |
| 2. | Table | 4 |
| 3. | Screen mesh stretcher | 5 |
| 4. | Gullotine | 1 |
| 5. | Magnifier | 10 |
| 6. | Squeege | 20 |
| 7. | Stencil knife | 10 |
| 8. | Compass cutter | 2 |
| 9. | Drying Rack (Cabinet) | 1 |
| 10. | Light table | 4 |
| 11. | Pallet | 2 |
| 12. | Register scope | 1 |
| 13. | Destometer | 1 |
|  14. | Type scale | 1 |
|  15. | Printing down frame | 1 |
|  16. | Small offset machine | 1 |
|  17. | A set of Computer | 1 |
|  18. | Scanner and Printer | 1 each |
|  19. | Giant stapler | 2 |

**SUGGESTED READING LIST**

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| S/N |  TITTLE |  AUTHOR |
|  1 | Printing Technology | Adams Faux |
|  2 | Comprehensive Graphic Art | Dr Ervin A, DenisDr John D,Jenkins |
|  3 | Screen Printing Techniques | Albert Kosloff M,A |
| 4 | An Approach to Printing Management | Soji Adeniyan |
| 5 | Graphic Communication in Nigeria | Abdul Rasheed Afolabi |

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