

**SHIVAJI UNIVERSITY,
KOLHAPUR**



“A⁺⁺” Accredited by NAAC
(2021) with CGPA 3.52

Faculty of Interdisciplinary studies
Structure, Scheme and Syllabus for
Bachelor of Vocation (B. Voc.)

Diploma in Printing and Publishing

Part I- Sem. I&II

(Subject to the modifications that will be made from time to time)

Syllabus to be implemented from June, 2022-2023 onwards

As per National Education Policy 2020

National Education Policy (NEP-2020)

First Year Bachelor of Vocation (B.Voc).- Diploma in Printing and Publishing)

Course Structure for (Level-5)

**With Multiple Entry and Multiple Exit option
(To be implemented from the Academic Year 2022-23)**

Semester I – Duration: 6 Months (Certificate)											
Sr. No.	Teaching Scheme					Evaluation Scheme					
	Course	No. of Lectures		Hours (T + P)	Credits	Theory	Internal/ Practical	Total Marks	Min Marks (Separate passing)	Exam Duration (Hrs.)	
		T	P							T	P
1.	AECC-A	4	2	6	4	40	10	50	18	2	-
2.	GEC-A	4	2	6	4	40	10	50	18	2	-
3.	DSC-A-I	4	-	4	4	50	-	50	18	2	-
4.	DSC-A-II	4	-	4	4	50	-	50	18	2	-
5.	DSC-A-III	4	-	4	4	50	-	50	18	2	-
6.	SEC-A-I	-	4	4	2	-	50	50	18	-	3
7.	SEC-A-II	-	4	4	2	-	50	50	18	-	3
8.	SEC-A-III	-	4	4	2	-	50	50	18	-	3
9.	SEC-A-IV	-	-	2	2	-	50	50	18	-	-
Total		20	16	38	28	230	220	450	-	-	

Semester II – Duration: 6 Months (Diploma)											
Sr. No.	Teaching Scheme					Evaluation Scheme					
	Course	No. of Lectures		Hours (T + P)	Credits	Theory	Internal/ Practical	Total Marks	Min Marks (Separate passing)	Exam Duration (Hrs.)	
		T	P							T	P
1.	AECC-B	4	2	6	4	40	10	50	18	2	-
2.	GEC-B	4	2	6	4	40	10	50	18	2	-
3.	DSC-B-I	4	-	4	4	50	-	50	18	2	-
4.	DSC-B-II	4	-	4	4	50	-	50	18	2	-
5.	DSC-B-III	4	-	4	4	50	-	50	18	2	-
6.	SEC-B-I	-	4	4	2	-	50	50	18	-	3
7.	SEC-B-II	-	4	4	2	-	50	50	18	-	3
8.	SEC-B-III	-	4	4	2	-	50	50	18	-	3
9.	SEC-B-IV	-	-	2	2	-	50	50	18	-	-
Total		20	16	38	28	230	220	450	-	-	
Grand Total		40	32	76	56	460	440	900	-	-	

<ul style="list-style-type: none"> • Student Contact Hrs Per week: 36 hrs 	<ul style="list-style-type: none"> • Total marks for B.Voc.- Diploma: 900
<ul style="list-style-type: none"> • Theory and Practical Lectures: 48 Minutes Each 	<ul style="list-style-type: none"> • Total credits for B.Voc.- Diploma: 56
<ul style="list-style-type: none"> • AECC: Ability Enhancement Compulsory Course (Compulsory English) 	
<ul style="list-style-type: none"> • Practical workload will for batch of 20 students 	
<ul style="list-style-type: none"> • Practical Examination will be conducted Semester wise for 50 Marks per course (subject). 	
<ul style="list-style-type: none"> • DSC: Discipline Specific Core Course - Candidate can opt three courses (Subjects) from DSC. 	
<ul style="list-style-type: none"> • GEC: Generic Elective Compulsory Course - Candidate can opt any one course (Subject). 	
<ul style="list-style-type: none"> • There shall be separate passing for theory and practical courses. 	
<ul style="list-style-type: none"> • AECC & GEC Internal Evaluation should be done at college or respective departmental level 	
<ul style="list-style-type: none"> • Exit option after Level 5: Students can exit with Diploma Course in Bachelor of Vocation with the completion of courses equal to minimum of 56 credits and also shall have to acquire additional CCC credits by successfully completing CCC-I and CCC-II courses which are assisted by Compulsory Civic Courses 	
<ul style="list-style-type: none"> • SEC-A & SEC-B are two parts of Vocational Diploma Course-I. Link for the pool of SEC courses. (You may add or delete any courses as per available facilities) 	

Eligibility:

Eligibility for Admission: For Diploma: 10 + 2 from any faculty/ITI/MCVC or equivalent
For Advance Diploma: Diploma or equivalent in any related stream.

Eligibility for Faculty: 1) Post Graduate with NET / SET/Ph. D. Or
2) Five Year Industry Experienced Personal
2) M. A. (English) with NET/SET for Business Communication

Eligibility for Lab Assistant: Graduation with related field

Staffing Pattern: Teaching: In the 1st year of B. Voc. – One Full Time
one C. H. B. for Business Communication

Lab. Assistant: For 1st Year of B. Voc. – 1 Part Time
For 2nd and 3rd Year (Inclusive of 1st Year) of B. Voc. – 1 Full Time

**Bachelor of Vocation (B. Voc.) Part I - Sem. I
(AECC-A)**

Paper – I: Business Communication-I

Paper No: I

Theory: 4 lectures/week

Practical: 02 lectures per week per batch of 20 students

Credits: 04

Total Marks: 50 (Theory 40 + Internal 10)

Units Prescribed for Theory: 40 Marks.

Unit 1: Use of English in Business Environment

Topics:

Business Vocabulary: Vocabulary for banking, marketing and for maintaining public relations
What is a sentence?
Elements of a sentence
Types of sentence: Simple, compound, complex

Unit 2: Writing a Letter of Application and CV/ Resume

Topics:

Structure of a letter of application for various posts
CV/ Resume and its essentials

Unit 3: Presenting Information/Data

Topics:

Presenting information/data using graphics like tables, pie charts, tree diagrams, bar diagrams, graphs, flow charts

Unit 4: Interview Technique

Topics:

Dos and don'ts of an interview
Preparing for an interview
Presenting documents
Language used in an interview

Practical: Based on the theory units 10 Marks.

Reference Books:

- Sethi, Anjane & Bhavana Adhikari. *Business Communication*. New Delhi: Tata McGraw Hill
 - Tickoo, Champa & Jaya Sasikumar. *Writing with a Purpose*. New York: OUP, 1979.
 - Sonie, Subhash C. *Mastering the Art of Effective Business Communication*. New Delhi: Student Aid Publication, 2008.
 - Herekar, Praksh. *Business Communication*. Pune: Mehta Publications, 2007.
 - Herekar, Praksh. *Principals of Business Communication*. Pune: Mehta Publications, 2003.
 - Rai, Urmila & S. M. Rai. *Business Communication*. Himalaya Publishing House, 2007.
 - Pradhan, N. S. *Business Communication*. Mumbai: Himalaya Publishing House, 2005.
 - Pardeshi, P. C. *Managerial Communication*. Pune: NiraliPrakashan, 2008.
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Pattern of a Question Paper
B. Voc. Part-I (Diploma in Printing and Publishing) Semester –I (Certificate)
Business Communication-I (AECC-A)

Paper No: I
Time: 2 hours

Total Marks: 50

- | | |
|--|----|
| Q. 1 Do as directed. Question items on Unit 1 to be asked.
(10 out 12) | 10 |
| Q. 2 Write a letter of application.
OR
Draft a CV/ Resume for a particular post. | 10 |
| Q. 3 Present a given information or data using a table/ chart/ pie diagram, etc.
(Any one diagram to be drawn.) | 10 |
| Q. 4 Fill in the blanks in the given interview. | 10 |

Practical Evaluation: 10 Marks

Oral and Presentation based on the units prescribed.

Note:

The above structure is designed as per the guidelines of NSQF and NEP. The structure may be flexible for B.Voc. I courses as per their requirements.

Bachelor of Vocation (B. Voc.) (Diploma in Printing and Publishing) Part I - Sem. I(Certificate)
Generic Elective Compulsory Course (GEC– A)
Paper Title: Basic Concepts of Packaging Technology

Paper No: II

Theory: 4 lectures/week

Practical: 2 lectures/week/batch

Credits: 04

Total Marks: 50 (Theory 40 + Internal 10)

Course Outcomes: The students will acquire knowledge of

1. **Packaging in Perspective**
2. **Packaging material suppliers**
3. **Packaging – Today and Tomorrow**
4. **Packaging Considerations**
5. **Handling Considerations**

Content of syllabus:

Unit I: (10 Hrs)

Definition, Economics impact of packaging. Advantages of packaging- to customer, retailer, distributor, handler, transporters, manufacturer, society, nation. Disadvantages of packaging- cost, resource utilization, energy, toxicity, litter, solid waste, wastage, deception, quality.

Unit II: (10 Hrs)

Basic raw materials, materials for packaging, converting of packaging materials. Packaging equipment suppliers: converting equipment, packaging machinery, packaging materials and filled packages testing machines.

Unit III: (10 Hrs)

Demographic influence on packaging: growing population, shifts in definition of household units, geographic redistribution, increase in number of working women, increase in number of single living alone

Unit IV: (10 Hrs)

(a) Product Characteristics: Physical characteristics of the product: Physical state, Weight, centre of gravity, fragility, rigidity, surface finish etc.; (b)Physiochemical characteristics of the product: Susceptibility to water, water vapour, gases, heat, light, corrosion.

Unit V: (8 Hrs)

Need for handling, situations of loading and unloading, need for trans-shipments, Methods of handling- manual & mechanical, handling devices.

Books Recommended: (List of Minimum 5 Books)

01. Fundamentals of Packaging Technology (Natarajan S., Kumar B.)
02. The Wiley Encyclopedia of Packaging Technology by Aaron L. Brody (Author), Kenneth S. Marsh (Author)
03. Packaging Technology: Fundamentals, Materials and Processes (Anne Emblem)
04. Packaging Design: Successful Product Branding From Concept (Marianne R. Klimchuk, Sandra A. Krasovec)

05. Complete Hand Book On Packaging Technology And Industries

Note: (If any - such as

- (1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

Bachelor of Vocation (B. Voc.) Part I - Sem. I(Certificate)
(Diploma in Printing and Publishing)
Discipline Specific Core Course (DSC- A-I)
Paper Title: Basic Printing Techniques-1

Paper No:III
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Principle of Different printing process & Comparison
2. Lithographic offset Printing
3. Screen Printing
4. Substrates

Content of syllabus:

Unit I: (12 Hrs)

Basic Principle of letterpress/ Flexography Printing Basic Principle of Offset Printing Basic Principle of Gravure Printing Basic Principle of Screen Printing 12 Comparison of Relief & Intaglio Plano & Intaglio Relief & Plano.

Unit II: (12Hrs)

Lithographic offset Printing

• Sheet feed Machine Units :- Feeding, Inking, • Dampening, Printing& Delivery Unit Image carriers : Plate making metals, need of 12 graining, effect of exposure, printing down frame • Types of plate:- Wipe on plate, P.S.Plate • Advantages of Offset Process, Application of Offset process

Unit III: (12Hrs)

Screen Printing • Introduction :- cloth, clamp, screen • Screen making :- Direct method & Indirect method 12 • Applications, Advantages & Limitation

Unit IV: (12Hrs)

Substrates • Types of paper, Board, Plastic etc

Books Recommended: (List of Minimum 5 Books)

01 Herbert Simonn Introduction to Printing

02 Ian Faux Modern Lithography Macdonad& Evans Plynont.

03 Surjeet Gupta Printing Today Print India Journal, Delhi

04 Surjeet Gupta A Guide to Printing Inks Print India Journal, Delhi

05 R. Krishnamoorthi Silk Screen Printing Print India Journal, Delhi

Note: (If any - such as

(1. In theory examination, the weight age to numerical problems should not exceed 30%.

2. Students can use scientific calculators in theory examination.)

Bachelor of Vocation (B. Voc.) Part I - Sem. I(Certificate)
(Diploma in Printing and Publishing)
Discipline Specific Core Course (DSC- A-II)
Paper Title: Printing design

Paper No : IV
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Graphic Design Fundamentals and Principles
2. Colors in Graphic Design
3. Preparation of Layout for Graphic Reproduction
4. Typographic Principles

Content of syllabus:

Unit I: (12Hrs)

Study of Fundamentals of Graphic Design Point, line, space, mass, size, scale, tone, texture, pattern, color. Use, versatility, and purposes of design principles. Study of different media and its substitutes, and economy of graphic design.

Unit II: (12Hrs)

Color Terminology, colour wheel Hue, value, Chroma, brightness, shades, tint, color symbolism Color Relationship Cool, warm, contrast, complementary colors and colors schemes

Unit III: (12 Hrs)

Definition of layout and attributes of a good layout, Study of stages involved in preparing a good layout such as visualization, thumbnail and rough layout& final layout Definition, types, applications, advantages and limitation of House Style and Dummy. House style rules and basis, qualification of proofreader and copyholder, rules for word division and use of hyphenation

Unit IV: (12 Hrs)

Study of Typographic Elements, Understanding face of types, parts of type and typeface, types of strokes and serifs, termination. Font style and size of type, text and display faces Definition legibility and readability. Study of factors governing legibility and readability. Study of editing and proofreading of text copy. Study of different types of proof reading marks

Books Recommended: (List of Minimum 5 Books)

- 01 L. Heath Phototypesetting Watson-Guptill Publications.
- 02 Geoff Barlow Typesetting & Composition Blue Print
- 03 Hugh Speirs Introduction to Prepress BPIF Publishing.
- 04 H. S. Warford Design for Print Production JE. Reeve Fowkes
- 05 KailashTakale A handbook of typography NirmalaSadanPrakashan, New Delhi

Note: (If any - such as

- (1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

Bachelor of Vocation (B. Voc.) Part I - Sem. I(Certificate)
(Diploma in Printing and Publishing)
Discipline Specific Core Course (DSC- A-III)
Paper Title: Screen Printing

Paper No:V
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Brief idea- Materials
2. Stretching
3. Screen Preparation Methods
4. Machines

Content of syllabus:

Unit I: (12Hrs)

History & development. Comparison with other processes. Advantages, limitations & applications. Materials Raw materials Physical fabric properties, Elongation characteristics of 12 polyester fabrics Geometry of screen printing fabrics Colored screen printing fabric Frames Materials used for frame- wooden or metal, frame size C, G clamps screen pretreatments Stretch factor relation.

Unit II: (12Hrs)

Hand Stretching Mechanical Stretching Pneumatic Stretching Multiple 12 Stretching Correct Stretching Recommended Tension Tension measuring instrument

Unit III: (12Hrs)

Stencils, Hand cut, Direct emulsion, Indirect method, Direct- indirect (direct film), capillary direct. Comparison of all methods.

Unit IV: (12Hrs)

Sheet fed – semi, full automatic Web fed – flat, rotary

Books Recommended: (List of Minimum 5 Books)

1. S. S. Thall Handbook for screen printers
- 2 Handbook on Printing Technology ,NIIR Board of Consultants
3. Start Your Own Screen-Printing Business, Mongiello Anthony

Note: (If any - such as

- (1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

Bachelor of Vocation (B. Voc.) Part I - Sem. I(Certificate)
(Diploma in Printing and Publishing)
Skill Enhancement Courses (SEC- A-I)
Paper Title: Basic Printing Techniques-1

Paper No: P.I
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

- 1.Process camera
- 2.Plate making

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

1. Camera - Introduction to parts of process camera, chemicals.
2. Negative & positive making
3. Plate making – Introduction to plate making equipments, chemicals & terms
4. Preparation of P.S. positive plate
5. Introduction of magnifying glass, micrometer, line, half tone & solid printing.
6. Introduction of functions of feeder, inking, dampening, printing, delivery.
7. Plate fixing

Student Instructions:

1. **Wear an apron before coming to the laboratory**
2. **.Wear hand gloves to avoid direct contact with printing solution and inks.**
3. **Do not leave grease, oil or printing ink on the floor it may cause slippage.**
4. **Students have to dispose the used or waste materials in an appropriate container.**
5. **wash hands thoroughly with soap and water.**
- 6 **Disconnect electronic equipment after use**
8. **keep your work and clean.**

Laboratory Requirements:

- 1.**Chemical**
2. **lab instruments.**

Nature of Practical Question Paper:

SHIVAJI UNIVERSITY, KOLHAPUR.

**B. Voc Printing & Publishing
(Diploma in Printing and Publishing)
Practical Examination, Dec. 2022**

Sem-I,

Time :
Seat No.

Date :
Batch No.

**P.-I Basic Printing Techniques - I
Introduction to process camera**

Horizontal process camera with diagram & parts

OR

Vertical process camera with diagram & parts

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1) Name of Parts (5) 2) Work of Parts (10) 3) Diagram (10)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

Bachelor of Vocation (B. Voc.) Part I - Sem. I
(Diploma in Printing and Publishing)
(Certificate) Skill Enhancement Courses (SEC- A-II)
Paper Title: Printing Design

Paper No: P.II
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. Graphic design

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

1. Drawing various typefaces along with their dimensional attributes such as x-height, ascender and descender lines.
2. Graphic designing for display type (at least two) job.
3. Application and study of design principles making different types of graphic designs.
4. Preparation of different types of color wheel and scheme and symbol for a given graphic product.
5. Preparation of thumbnail, rough layout, house style specimen and dummy for a given graphic product
6. Presentation of collection of various printed products newspaper, magazine advertisements, letterheads highlighting design and layout making principles
7. Presentation of collection of various printed products newspaper, magazine advertisements, letterheads showing page make up and assembly

Student Instructions:

- 1. Wear an apron before coming to the laboratory**
- 2. Disconnect electronic equipment after use**

Laboratory Requirements:

- 1. Computer**
- 2. Software- Corel Draw, Photoshop, illustrator**

Nature of Practical Question Paper:

SHIVAJI UNIVERSITY, KOLHAPUR.
B. Voc Printing & Publishing
(Diploma in Printing and Publishing)
Practical Examination, Dec. 2022
Sem-I,

Time :
Seat No.

Date :
Batch No.

P.II. Printing Design
1) Draw a color wheel

Draw a color wheel diagram with poster color for primary, secondary and tertiary colors

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1) Aim (2) 2) Theory (5) 3) Diagram of Colour Wheel (18)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

Bachelor of Vocation (B. Voc.) Part I - Sem. I(Certificate)
(Diploma in Printing and Publishing)
Skill Enhancement Courses (SEC– A-III)
Paper Title: Screen Printing

Paper No:P.III
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1.Screen Printing

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

- 1) To prepare a screen by direct process
- 2) To prepare a screen by Direct-Indirect process
- 3) To prepare a screen by Direct-Indirect process for two color printing
- 4) To prepare a screen by hand drawing method
- 5) To prepare a screen by Direct-Indirect process for two color printing
- 6) Visiting card, letter head, greeting card.
- 7) Metallic effect, flocking.
- 8) Irregular shape objects
- 9) Stickers – transparent, opaque, water slide, instant transfer
- 10) Ceramic labels – special inks, curing.

Student Instructions:

- 1. Wear an apron before coming to the laboratory**
- 2. Disconnect electronic equipment after use**

Laboratory Requirements:

- 1. Lab instruments**

Nature of Practical Question Paper:

SHIVAJI UNIVERSITY, KOLHAPUR.

**B. Voc Printing & Publishing
(Diploma in Printing and Publishing)
Practical Examination, Dec. 2022**

Sem-I,

Time

Date :

Seat No.

Batch No.

P.III Screen Printing

1) To prepare a screen by Direct-Indirect process for two color printing

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1) Aim and Material/Equipment Required and Theory (7) 2) Screen Exposing (10) 3) Printing (8)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

Bachelor of Vocation (B. Voc.) Part I - Sem. I (Certificate)
(Diploma in Printing and Publishing)
Skill Enhancement Courses (SEC- A-IV)
Paper Title: Project/Field Work/Industrial Visit/Study Tour.

Paper No: IV

Term Work: 2 lectures/week

Credits: 02

Total Marks: 50(Internal)

Course Outcomes: The students will acquire knowledge of

- 1.
- 2.
- 3.
- 4.
- 5.

Important Note: Field Work/Industrial Visit/Study Tour should be of **minimum five days** in or out of Maharashtra.

Suggested Places:

1. In Maharashtra:
2. Out of Maharashtra:

Student Instructions:

- 1.
- 2.
- 3.

Laboratory Requirements:

- 1.
- 2.

Nature of Evaluation:INTERNAL

-Details

Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)
(AECC-B)

Business Communication-II

Paper No:VI

Theory: 4 lectures/week

Practical: 02 lectures per week per batch of 20 students

Credits: 04

Total Marks: 50 (Theory 40 + Internal 10)

Units Prescribed for Theory: 40 Marks.

Unit 1: Group Discussion

Topics:

Preparing for a Group Discussion
Initiating a Discussion
Eliciting Opinions, Views, etc.
Expressing Agreement/ Disagreement
Making Suggestions; Accepting and Declining Suggestions
Summing up.

Unit 2: Business Correspondence

Topics:

Writing Memos, e-mails, complaints, inquiries, etc.
Inviting Quotations
Placing Orders, Tenders, etc.

Unit 3: English for Negotiation

Topics:

Business Negotiations
Agenda for Negotiation
Stages of Negotiation

Unit 4: English for Marketing

Topics:

Describing/ Expaining a Product/ Service
Promotion of a Product
Dealing/ bargaining with Customers
Marketing a Product/ Service: Using Pamphlets, Hoardings, Advertisement,
Public Function/ Festival

Practical: Based on the theory units 10 Marks.

Reference Books:

- Herekar, Praksh. *Business Communication*. Pune: Mehta Publications, 2007.
 - Herekar, Praksh. *Principals of Business Communication*. Pune: Mehta Publications, 2003.
 - John, David. *Group Discussions*. New Delhi: Arihant Publications.
 - Kumar, Varinder. *Business Communication*. New Delhi: Kalyani Publishers, 2000.
 - Pardeshi, P. C. *Managerial Communication*. Pune: NiraliPrakashan, 2008.
 - Pradhan, N. S. *Business Communication*. Mumbai: Himalaya Publishing House, 2005
 - Rai, Urmila& S. M. Rai. *Business Communication*. Mumbai: Himalaya Publishing House, 2007.
 - Sethi, Anjanee& Bhavana Adhikari. *Business Communication*. New Delhi: Tata McGraw Hill.
 - Tickoo, Champa& Jaya Sasikumar. *Writing with a Purpose*. New York: OUP, 1979.
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Pattern of a Question Paper
B. Voc. Part-I Semester –II
(Diploma in Printing and Publishing)
Business Communication-II (AECC-B)

Paper No: VII

Time: 2 hours

Total Marks: 50

Time: 2 hours Total Marks: 40

- | | |
|---|----|
| Q. 1 Fill in the blanks in the following Group Discussion.(On Unit 1) (10 out 12) | 10 |
| Q. 2 Attempt ANY ONE of the following (A or B): (On Unit 2) | 10 |
| Q. 3 Fill in the blanks with appropriate responses:(On Unit 3) | 10 |
| Q. 4 Attempt ANY ONE of the following (A or B):(On Unit 4) | 10 |

Practical Evaluation: 10 Marks

Oral and Presentation based on the units prescribed.

Note:

The above structure is designed as per the guidelines of NSQF and NEP. The structure may be flexible for B.Voc. I courses as per their requirements.

Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)
Generic Elective Compulsory Course(GEC–B)
Paper Title: Computer Technology

Paper No:VII

Theory: 4 lectures/week

Practical: 2 lectures/week/batch

Credits: 04

Total Marks: 50 (Theory 40 + Internal 10)

Course Outcomes:

1 Survey of the technologies

2 Computer to plate/cylinder/screen

3.Computer to press

4.Computer to print

Content of syllabus:

Unit I: (12Hrs)

Computer to film ,Computer to plate , computer to press(Direct imaging and computer to print),The use of computer to technologies and networking for the production of print media. Principle and equipment film material.

Unit II:(12Hrs)

Introduction , Technology of computer to plate system for offset printing, Design principle ,Imaging methods and plate punching, computer to plate system for offset ,Flexography , Gravure and screen printing ,Productivity and Economic efficiency, printing plate for digital imaging, trends to plate to plate.

Unit III:(12Hrs)

Computer to press, expansion and comparison of system, computer to press printing system with re-imaginable master, concepts for re-imaginable Master with application.

Unit IV:(12Hrs)

Printing system based on electrophotography, Ionography, Magnetograph, inkjet. Design principle of computer to print system, digital printing.

Books Recommended: (List of Minimum 5 Books)

- 1. Printing technology, NIIR Boards**
- 2. Hand book of print media**

Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)

Discipline Specific Core Course (DSC-B-I)
Paper Title: Basic Printing Techniques-2

Paper No: VIII
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Flexography Printing
2. Gravure Printing
3. Non-Impact Printing
4. Binding

Content of syllabus:

Unit I: (12Hrs)

Flexography Printing Machine Parts & working Applications, Advantages & Limitations

Unit II: (12Hrs)

Gravure Printing Machine Parts & working , Applications, Advantages & Limitations

Unit III: (12Hrs)

Non-Impact Printing Introduction Type of process- Inkjet & Xerography , Applications, Advantages & Limitations

Unit IV: (12Hrs)

Binding Different types of binding-side sewing/ stitching, centre, Sewing / stitching, Perfect binding

Books Recommended: (List of Minimum 5 Books)

1. Herbert Simonn Introduction to Printing
2. Ian Faux Modern Lithography Macdonad& Evans Plynont
3. Surjeet Gupta Printing Today Print India Journal, Delhi
4. Surjeet Gupta A Guide to Printing Inks Print India Journal, Delhi
5. R. Krishnamoorthi Silk Screen Printing Print India Journal, Delhi

Note: (If any - such as

- (1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

**Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)**

**Discipline Specific Core Course (DSC– B-II)
Paper Title: Reproduction Photography**

Paper No:IX
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Graphic Reproduction.
2. Optics, Illuminant:
3. Films, Exposure, Developing & Fixing:
4. Densitometry, sensitometer
5. Halftone reproduction
6. Print Layout Preparation Creating Originals

Content of syllabus:

Unit I: (8Hrs)

Definition of Graphic Reproduction. Concept of originals- line, photograph, continuous tone, quarter tone, positive, negative, Classification of original: -Monochrome- high key, low key Multicolour- transparency, reflection, digital, Evaluation & desirable characteristics of original. Sizing & Scaling of original - Conventional and digital, Types of cameras- Conventional, darkroom, auto compact, Horizontal, Vertical, enlarger type, roll film daylight camera, Contact frame.

Unit II: (10Hrs)

Optics, Illuminant: Definition of lenses, focal length, depth of focus, depth of field, real image, virtual image, conjugate foci, aberrations, Lens aperture & its function- Iris diaphragm, Waterhouse stops, F/ numbers, Flare- cause of flare, flare factor, Lateral reversal- prism, mirror, roof mirror light sources : i) Sunlight ii) Mercury vapour lamp iii) Tungsten filament iv) Arc lamp v) Incandescent lamp vi) Tube gas lamp- pulsed Xenon, Halogen vii) Laser- LED, IR Application related to: Colour temperature, Inverse square law, spectral distribution.

Unit III: (10Hrs)

Films, Exposure, Developing & Fixing: Ingredients of emulsion, Types of emulsion: - By contrast- High contrast, low contrast, high speed, low speed, line film, lith film, rapid access film, continuous tone film, By sensitivity - ordinary, orthochromatic, panchromatic, Laser sensitive, Film structure, Latent image theory, Manufacture of emulsions, : Time scale method, intensity scale method, Line exposure: -Basic line exposure, Evaluation of line negative Developers - ingredients & their function, Factors affecting rate of development Fixer - chemistry Concept of effective development – manual Development automatic- programmable processor Verification of output after treatment – Reduction, Intensification, Chemical reversal. Screens Glass screen-

Description, screen rulings, screen distance, theories of dot formation Contact screens- Gray, Magenta, contrast with magenta contact screen using magenta & yellow c.c. Filters

Unit IV: (6 Hrs)

Densitometry, sensitometry Advantages of densitometry, Optical density, Densitometers- Reflection, Transmission, Programmable, Factors affecting Sensitometry, Study of sensitometric curves & characteristic curves, Sensitometric terms- Opacity, specular & diffused density, Reciprocity & it's failure, Intermittency effect, Herschell effect

Unit V: (8 Hrs)

Halftone reproduction Halftone exposure factors – Single stops, 8 multiple stops Main exposure, Flash exposure, Bump exposure Basic density range Screen ruling, screen angle, Moire pattern, dot shapes A.M. screening, F.M. screening Evaluation of a halftone negative Endpoint dots & programming a computerized camera for half tone exposure Line & half tone positive making using contact frame & punch register system.

Unit VI : (8 Hrs)

Print Layout Preparation Creating Originals: Analog and Digital Originals. Basics of page layouting, important considerations: margins, bleeds, marks and print aids. Layout of different print jobs Proofing systems, dummy preparation, instructions for print production Artwork and design Processing Line & halftone techniques, history of film and film processing, basic prepress Techniques, Halftone theory, methods of converting continuous tone to Halftone - AM, FM & hybrid screening, Dot reproduction, Color correction in DTP

Books Recommended: (List of Minimum 5 Books)

1. J.W.Burden Graphic Reproduction Photography Focal Press Ltd. London
2. John Cogoli, Graphic Arts Photography B&W GATF
3. L.Lobel, M.Dubois, Basic of Sensitometer Focal Press Ltd; London
4. Fred Wentrel, Ray Blair and Tom Destre Graphic Arts Photography Color. GATF
5. Kennards Cloud, Electronic Imaging Applications in Graphic Arts: Proceedings

Note: (If any - such as

- (1. In theory examination, the weightage to numerical problems should not exceed 30%.
2. Students can use scientific calculators in theory examination.)

**Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)**

Discipline Specific Core Course (DSC– B-III)

Paper Title: Printing Material Science

Paper No: X
Theory: 4 lectures/week

Credits: 04
Total Marks: 50 (Theory)

Course Outcomes: The students will acquire knowledge of

1. Polymers used in Printing and Packaging
2. Classification and General Characteristics of Printing Inks
3. Printing Ink Drying and Curing Mechanisms
4. Paper Substrate
5. Properties of Paper

Content of syllabus:

Unit I: (8Hrs)

Introduction to polymer, Thermo set & thermoplastic polymer, natural & synthetic polymer, application of polymers in printing industry as printing & substrates, image carrier emulsion, rollers for application of various coatings.

Unit II: (10 Hrs)

Ingredients of printing ink - Pigments, Vehicles, Solvents, Additives etc. Manufacturing of printing ink, General formulation of printing ink and factors affecting ink formulation Other specialty inks for various applications

Unit III: (8Hrs)

Rheological properties of ink like viscosity, shear, yield, thixotropy, length and tack Subjective & objective ink testing methods. Various ink problems like Set off, trapping, filling, caking, End use properties of ink

Unit IV: (10Hrs)

Importance of paper and paper products in printing industry. Paper manufacturing process and different machines used for manufacturing the paper Different surface finishes obtained in paper selection criteria of paper substrate for printing and converting applications

Unit V: (10Hrs)

Physical properties of paper such as GSM, thickness, density, Strength properties of paper such as tensile, tearing, folding strength. Chemical & Optical properties of paper like pH, color, gloss, brightness and opacity.

Books Recommended: (List of Minimum 5 Books)

1. Lawrence A. Wilson ,What Printer Should Know About Paper, GATF Press
2. L.C. Young Materials in Printing Processes Focal Press Publication

3. Leach and Pierce Printing Ink Manual Springer Publication

4. Dr. Nelson R. Eldred What Printer Should Know About Ink GATF Press

Note: (If any - such as

(1. In theory examination, the weightage to numerical problems should not exceed 30%.

2. Students can use scientific calculators in theory examination.)

**Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)**

**Skill Enhancement Courses (SEC-B-I)
Paper Title: Basic Printing Techniques-2**

Paper No: P.V
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. Flexography printing
2. Gravure Printing

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

1. 1 Flexography: Introduction to single colour flexo machine, various parts & take a print Out
2. Gravure: Introduction to Gravure machine, various parts & take a print out.
3. Non-Impact Printing Introduction & working of Ink jet printer & Xerography
4. Binding – Brief idea of binding materials, tools, and machines. Different styles of binding. Preparation of tear-off pad.

Student Instructions:

1. Wear an apron before coming to the laboratory
2. .Wear hand gloves to avoid direct contact with printing solution and inks.
3. Do not leave grease, oil or printing ink on the floor it may cause slippage.
4. Students have to dispose the used or waste materials in an appropriate container.
5. wash hands thoroughly with soap and water.
- 6 Disconnect electronic equipment after use
8. keep your work and clean.

Laboratory Requirements:

1. Chemical
2. Lab instrument

Nature of Practical Question Paper:

SHIVAJI UNIVERSITY, KOLHAPUR.

**B. Voc Printing & Publishing
(Diploma in Printing and Publishing)**

**Practical Examination, April 2022
Sem-II,**

Time :
Seat No.

Date :
Batch No.

**P.V Basic Printing Techniques - II
Binding**

- 1)Information**
- 2)Binding Material**
- 3)Diagram**

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1)Information About Binding (5) 2)Binding Material , tools (10) 3)Diagram (10)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

**Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)**

**Skill Enhancement Courses (SEC– B-II)
Paper Title: Reproduction photograph.**

Paper No:P.VI
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. Photograph Scan
2. Densitometer measurement
3. Digital camera operations

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

- 1 To study various types of conventional Originals, Digital Originals and Resolution
2. To scan a photograph and study the settings and edit the photographs for further processing
3. To scan a pre-printed original to understand and reduce moiré effect
4. To apply UCR, GCR and tonal gradation curves in Photoshop
5. To study working of Densitometer measurement of ink and paper densities, dot area, dot gain, contrast, trapping
6. To study Halftone dot structures, AM & FM, FAM
7. To study elements of Control strips & measurement
8. To study digital camera operations

Student Instructions:

1. Wear an apron before coming to the laboratory
2. Disconnect electronic equipment after use

Laboratory Requirements:

1. Digital Camera
2. Computer

Nature of Practical Question Paper:

SHIVAJI UNIVERSITY, KOLHAPUR.

**B. Voc Printing & Publishing
(Diploma in Printing and Publishing)**

Practical Examination, Dec 2020

Sem-II

Time :
Seat No.

Date :
Batch No.

P.VI Reproduction Technology

**To study various types of conventional originals, Digital originals and
Resolution**

- 1) Identify the given printed sample according to printing process and
- 2) Find out resolution of a given printed sample by eye glass

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1) Aim, Material& Equipment & procedure (3) 2) Identification of printed sample (10) 3) Identification of resolution(10) 4) Conclusion (2)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

**Bachelor of Vocation (B. Voc.) Part I - Sem. II
(Diploma in Printing and Publishing)**

**Skill Enhancement Courses (SEC– B-III)
Paper Title: Printing Material Science**

Paper No: P.VII
Practical: 4 lectures/week

Credits: 02
Total Marks: 50 (Practical)

Course Outcomes: The students will acquire knowledge of

1. GSM of substrate
2. Caliper thickness of substrate

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals: (Minimum 10)

- 1.To find GSM of substrate
2. To find caliper thickness of substrate
3. To identify various types of plastic films
4. To measure the viscosity of liquid ink
5. To take a proof of liquid ink by bar coater
6. To take a drawdown of paste ink.

Student Instructions:

1. Wear an apron before coming to the laboratory
2. Disconnect electronic equipment after use

Laboratory Requirements:

- 1.GSM testing machine
2. lab instrument

Nature of Practical Question

SHIVAJI UNIVERSITY, KOLHAPUR.
B.Voc. Printing & Publishing
(Diploma in Printing and Publishing)
Practical Examination, Apr. 2022
Sem-II

Time : .
Seat No.

Date :
Batch No.

P.VII Printing Material Science
To find GSM of substrate

- 3) Write down a formula for GSM calculation
- 4) Calculate the GSM of a given paper sample

Scheme of Marks

Sr.No	Heads of distribution of marks	Marks allotted	Marks obtained by candidate	Remarks if any
1	Practical- 1) Aim, Material& Equipment & procedure (3) 2) formula(10) 3) Calculation (10) 4) Conclusion (2)	25		
2	Journal	10		
3	Oral	15		
	Total	50		

Sign of the Examiner

Bachelor of Vocation (B. Voc.) Part I - Sem. II

(Diploma in Printing and Publishing)

Skill Enhancement Courses (SEC-B-IV)

Paper Title: Project/Field Work/Industrial Visit/Study Tour.

Paper No:P.VIII

Term Work: 2 lectures/week

Credits: 02

Total Marks: 50(Internal)

Course Outcomes: The students will acquire knowledge of

- 1.
- 2.
- 3.
- 4.
- 5.

Important Note: Field Work/Industrial Visit/Study Tour should be of **minimum five days** in or out of Maharashtra.

Suggested Places:

1. In Maharashtra:
2. Out of Maharashtra:

Student Instructions:

- 1.
- 2.
- 3.

Laboratory Requirements:

- 1.
- 2.

Nature of Evaluation: INTERNAL

-Details

