

No. of Printed Pages : 3

BPVI-041

DFPT

Term-End Examination

June, 2012

00384

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION THEORY**

Time : 2 hours

Maximum Marks : 50

Note : Attempt *any five* questions only.

All questions carry *equal* marks.

- 
1. Define *any ten* of the following terms : 10x1=10
- (a) Biological value
  - (b) Autolysis
  - (c) Curing
  - (d) Exhausting
  - (e) Cellophanes
  - (f) Thermoforming Packaging
  - (g) Rigor mortis
  - (h) Detergents
  - (i) Blanching
  - (j) LDPE
  - (k) Modified Atmospheric Packaging
  - (l) Shelf Life

2. Write short notes on *any two* of the following :  $2 \times 5 = 10$ 
  - (a) Role of fish in human nutrition.
  - (b) Odour changes in fish during spoilage.
  - (c) Sensory tests.
  
3. Why chilling of fish is done ? Describe the chilling of fish using ice. Name the different types of ice used for chilling of fish. Discuss about any two types of ice used for chilling of fish. 10
  
4. Define canning. What are its advantages ? Briefly explain the steps involved in the conventional canning process. 10
  
5. What is Value Addition ? What are its benefits ? Why value added products are popular ? Name any four value added fish products. 10
  
6.
  - (a) What are the traditional methods of preserving marine fishes ? Explain the principle behind these traditional methods. 5
  - (b) Describe the pre-smoking processes for preparation of smoked fish products. 5
  
7. Write short notes on *any two* of the following :  $2 \times 5 = 10$ 
  - (a) Pasteurized fish products
  - (b) Retort pouches
  - (c) Vacuum packaging

8. Write short notes on *any two* of the following :  $2 \times 5 = 10$
- (a) Packaging materials available for packing fish products.
  - (b) Packaging of chilled fish.
  - (c) Factors influencing value addition in fishes.
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No. of Printed Pages : 3

BPVI-041

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**June, 2013**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Attempt any five questions only. All questions carry equal marks.*

1. Define *any ten* of the following terms : **10x1=10**

- (a) Autolysis
- (b) Sanitizers
- (c) Canning
- (d) Retort pouches
- (e) Vacuum packaging
- (f) Value Addition
- (g) K value
- (h) Chilling
- (i) Thawing
- (j) HDPE
- (k) Aseptic Packaging
- (l) Active Packaging

2. Write short notes on *any two* of the following : 2x5=10
- (a) Composition of fish
  - (b) Essential fatty acids in Fish oil
  - (c) Changes occurring after Fish death
3. (a) Discuss about the handling of fish on board. 5
- (b) Explain about the facilities required in ideal fish landing centres. 5
4. Define Exhausting. Why it is done ? Discuss about the different methods of exhausting during canning. 10
- 
5. What are the differences between Freezing and Chilling ? Describe the equipments used for chilling and freezing of fishes ? Give the advantages and disadvantages of freezing. 10
6. (a) Describe the quick salting process for curing fish. 5
- (b) Define IQF. What are its advantages and disadvantages ? 5

7. Write short notes on *any two* of the following :  $2 \times 5 = 10$

- (a) Quality changes during frozen storage
- (b) Modified Atmospheric Packaging (MAP)
- (c) Anti-Microbial Packaging

8. Write short notes on *any two* of the following :  $2 \times 5 = 10$

- (a) Packaging of frozen fish products
- (b) Flexible Packaging Materials
- (c) Commercial role of Value Addition in Fisheries Sector.

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No. of Printed Pages : 2

**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**December, 2013**

00924

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Attempt any five questions only.*

*All questions carry equal marks.*

1. Define any ten of the following : **10x1=10**
  - (a) Can Seaming
  - (b) Latent Heat of Fusion
  - (c) Ambient temperature
  - (d) ATP
  - (e) Cryogenic freezing
  - (f) Halophilic bacteria
  - (g) PER
  - (h) Metabolism
  - (i) Aquaculture
  - (j) Rancidity
  - (k) LDH
  - (l) Ranching
  
2. Describe briefly the various chemical methods of evaluating rate of spoilage of fish. **10**

3. Define quick freezing. What are the steps involved in the production of frozen shrimp for export ? What is the recommended temperature for freezing ? 10
  
  4. Write briefly about the bacterial flora seen in a freshly caught marine fish. 10
  
  5. Write short notes on **any two** of the following :
    - (a) Retort Pouch Packing 2x5=10
    - (b) Fish sauce
    - (c) Role of Fish in human Nutrition
  
  6. What is meant by live fish transport ? Describe briefly the methods used commercially. 10
  
  7. Write notes on the following (**any two**) : 2x5=10
    - (a) Battered and Breaded products
    - (b) Surimi
    - (c) Importance and scope of value Addition
  
  8. Differentiate the following (**any two**) : 2x5=10
    - (a) Quick freezing X (Vs.) Slow freezing
    - (b) Aseptic packaging (Vs.) Active packaging
    - (c) Dry curing (Vs.) Pit curing.
-

No. of Printed Pages : 3

00005

BPVI-041

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**June, 2014**

**BPVI-041 :INTRODUCTION TO FISH PROCESSING,  
PACKAGING AND VALUE ADDITIONS.**

*Time : 2 hours*

*Maximum Marks : 50*

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*Note : Attempt any five questions only.*

*All questions carry equal marks.*

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1. Define *any ten* of the following. 10x1=10
- (a) Protein efficiency ratio.
  - (b) K. value
  - (c) Anaerobic bacteria.
  - (d) Shelf life
  - (e) Anabolism
  - (f) HACCP
  - (g) Autolysis
  - (h) Barcoding
  - (i) Sanitizers

- (j) Elasmobranchs
- (k) Omega. 3-unsaturated fatty acids
- (l)  $P_{H_1}$

2. Write short notes on *any two* of the **2x5=10** following :

- (a) Gram staining
- (b) Essential Fatty acids in fish oils.
- (c) Rigor mortis

3. Write briefly the methods of smoke curing of fish **10** commercially practised.

4. Discuss in detail the various methods **10** commercially used for processing of fish.

5. Describe briefly the various steps involved in **10** retort processing of fish.

6. Write short notes on *any two* of the **2x5=10** following:

- (a) Black spot formation in shell-on shrimp
- (b) TMA in fish as an indicator of fish spoilage.
- (c) Proteins in fish meat.

7. Differentiate the following (*Any Two*) 2x5=10
- (a) Fish sauce and Fish sausage
  - (b) Mesophilic and Psychrophilic bacteria
  - (c) Block ice and fluid ice.
8. Discuss briefly the bio-chemical 10  
changes occurring after fish death.  
(Post-mortem changes).



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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**00691 Term-End Examination**

**December, 2014**

**BPVI-041 : INTRODUCTION TO FISH, PROCESSING,  
PACKAGING AND VALUE ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Answer any five questions. Make the diagram or structure wherever necessary. All questions carry equal marks.*

- 
1. Define the following terms : 10×1=10
- (a) Aquaculture
  - (b) Essential Fatty acids in Fish oil
  - (c) Pasteurization
  - (d) MAP
  - (e) Rigor mortis
  - (f) K-value
  - (g) Kench curing
  - (h) Mas-meen
  - (i) Blanching
  - (j) Brining

2. Write short notes on any **two** of the following : 2×5=10
- (a) Physical changes during spoilage of fish
  - (b) Lipids of fish
  - (c) Quality changes during frozen storage of fish
3. Explain how fish is handled from harvest till it reaches the consumer. Describe how fish is chilled by using ice. List the different types of ice used for chilling and explain any one type. 3+3+4
4. How is fish sun-dried ? What are the factors that influence the drying rate of fish ? Mention the different types of spoilages encountered in dried fish during storage. 2+4+4
- 
5. (a) What are the advantages of canning fish ? 5
- (b) What are the importance of blanching, exhausting and sterilization in canning process ? 5
6. (a) Differentiate between chilling and freezing. 5
- (b) Define IQF. What are its advantages and disadvantages ? 2+2+1

7. What are the different types of synthetic packaging materials used in fish processing ?  
Explain any one in detail. 5+5
8. Write short notes on any *two* of the following :  $2 \times 5 = 10$
- (a) Vacuum packaging
  - (b) Packaging of chilled fish
  - (c) Factors influencing value addition



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No. of Printed Pages : 2

**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

00330

**Term-End Examination**

**June, 2015**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

- Note :**
- (i) *Answer any five questions.*
  - (ii) *Write the diagram or structure wherever necessary.*
  - (iii) *All questions carry equal marks.*
- 
- 

**1. Define the following terms : 10x1=10**

- (a) Retort Pouch
- (b) Heat Exhaust
- (c) Autolysis
- (d) Thawing
- (e) Cryoprotectant
- (f) Canning
- (g) Aseptic packaging
- (h) Pit curing
- (i) Case Hardening
- (j) HDPE

2. Write short notes (any two) :  $2 \times 5 = 10$
- (a) Advantages of using ice for chilling fish.
  - (b) Biochemical composition of fish.
  - (c) Handling of fresh fish on board.
3. Why proper packaging of fish and fishery products is required ? Explain the method of packaging and storage of frozen fish and shrimp in detail.  $2+8$
4. (a) Explain the sensory methods of evaluating the quality of cooked fish. 5
- (b) What are the facilities required in an ideal fish landing centers ? 5
5. (a) Describe the quick salting process. 5
- (b) What is value addition ? What are its advantages and disadvantages ?  $2+2+1$
6. Explain the process of freezing of fish. What are the different types of freezers used for freezing commercially important fishes with advantages and disadvantages ?  $2+8$
7. Describe the different steps involved in the conventional canning process. 10
8. Write short notes on any two of the following :
- (a) Role of fish in human nutrition.  $2 \times 5 = 10$
  - (b) Principles of refrigeration
  - (c) Thermoforming packaging
-

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BPVI-041

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**December, 2015**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Attempt any five questions.*

*All questions carry equal marks.*

1. Explain any five of the following : 5x2=10
- (a) K - value
  - (b) Biological value
  - (c) Thermal Arrest Time
  - (d) Thawing
  - (e) Pasteurization
  - (f) HDPE
  - (g) Synthetic Packaging Materials
2. Write short notes on any two of the following : 2x5=10
- (a) Essential Fatty Acids in Fish Oil
  - (b) Factors influencing spoilage of fish
  - (c) Refrigerated sea water plants

3. (a) Differentiate between chilling and freezing of fish. 5  
(b) What is the importance of exhausting in canning ? Identify the different methods of exhausting. 2+3=5
4. (a) Define salting of fish. What are the different methods of salting ? Explain any one method in detail. 1+2+2=5  
(b) Describe the factors affecting the freezing time of fish. 5
5. (a) Define Individual Quick Freezing (IQF). Give its advantages and disadvantages. 1+3+1=5  
(b) What is the importance of Horizontal Plate Freezer ? Give its advantages and disadvantages. 1+3+1=5
6. Define Retort Pouch. Explain the properties of different materials used for its manufacture. Give its advantages and disadvantages. 1+5+4=10
- 
7. Write short notes on **any two** of the following : 2x5=10  
(a) Thermoforming packaging  
(b) Aseptic packaging  
(c) Packaging of Fish Pickles
8. (a) What are the advantages and disadvantages of value Addition in Fish ? 4+1=5  
(b) Describe the need and function of packaging of fish products. List the important groups of packaging materials used for fish products. 2+3=5
-

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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**June, 2016**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Attempt any five questions only. All questions carry equal marks.*

1. (a) Identify different categories of commercial fishes and shell fishes available in India. Give two examples for each category. **3+2=5**  
(b) Give the composition of fish. Mention the importance of any three nutrients. **2+3=5**
2. (a) Describe the different chemical changes which occurs after the death of fish. **5**  
(b) Identify any two methods of assessment of fish spoilage through enzymatic techniques. Explain any one method in detail. **2+3=5**
3. Write short notes on any two of the following :
  - (a) Utilization of fresh fish **2x5=10**
  - (b) Can filling
  - (c) Quick salting process

4. (a) Define smoking of fish. What are the factors responsible for preservation effect of smoking on fish products ?  $1+4=5$
- (b) Define Air Blast Freezer. Give its advantages and disadvantages.  $1+2+2=5$
5. Write short notes on **any two** of the following :
- (a) Freezing Curve  $2 \times 5 = 10$
- (b) Fluidized Bed Freezing
- (c) Can Seaming
6. (a) Differentiate between HDPE and LDPE. 5
- (b) What are Tin free steel cans ? How they are prepared ? Give their importance in packaging of fish products.  $1+2+2=5$
7. Write short notes on **any two** of the following :
- (a) Vacuum packaging  $2 \times 5 = 10$
- (b) Oxygen scavengers
- (c) Packaging of surimi
8. (a) Identify the factors which are relevant in the development of new food products. 5
- (b) Describe modified Atmospheric packaging. 5
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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**December, 2016**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : Attempt any five questions only. All questions carry equal marks.*

1. Define any ten of the following : 10x1=10
- (a) Rigor mortis
  - (b) Spawning
  - (c) Ranching
  - (d) Flavour
  - (e) Anaerobic bacteria
  - (f) Bar Coding
  - (g) pH
  - (h) Protein Efficiency Ratio
  - (i) Thawing
  - (j) Exhausting
  - (k) Shelf-life
  - (l) Chilling

2. Differentiate **any two** of the following :  $2 \times 5 = 10$
- (a) Dry curing and Pit curing
  - (b) LDPE and HDPE
  - (c) Mesophilic and Psychrophilic Bacteria
3. Write short notes on **any two** of the following :  $2 \times 5 = 10$
- (a) Battered and breaded products
  - (b) Sensory Tests
  - (c) Quick Salting Process
4. Name the different types of ice used for chilling of fish. Discuss in detail any three types of ice used.  $4 + 6 = 10$
5. Discuss about the packaging and storage of the following :
- (a) Dried and cured fish products 5
  - (b) Frozen Shrimp. 5
6. Define the principle of drying. Discuss about the three different methods of sundrying of fish.  $1 + 9 = 10$
7. Write short notes on **any two** of the following :
- (a) Pasteurization of fishery products  $2 \times 5 = 10$
  - (b) Fluidised bed freezer
  - (c) Presmoking processes.
8. Define autolysis. Describe the various enzymatic tests used for the assessment of fish spoilage.  $2 + 8 = 10$
-

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BPVI-041

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**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**June, 2017**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : (i) Attempt any five questions only.*

*(ii) All questions carry equal marks.*

- 
1. Define any ten of the following : 10x1=10
- (a) Essential amino acids
  - (b) Sanitizer
  - (c) Biological value
  - (d) Cryogenic freezing
  - (e) Cellophanes
  - (f) Corrosion
  - (g) Aseptic packaging
  - (h) Kench curing
  - (i) Lamination
  - (j) Rancidity
  - (k) Organoleptic evaluation
  - (l) Cryoprotectant
2. Differentiate any two of the following : 2x5=10
- (a) Aerobic and anaerobic bacteria.
  - (b) Glass container and metal cans.
  - (c) Freezing and thawing

3. Write short notes on **any two** of the following :
  - (a) Fish proteins **2x5=10**
  - (b) Freezing curve
  - (c) IQF
  
4. Give a schematic representation of the refrigeration cycle. Describe the functioning of air blast freezer and horizontal plate freezer. **5+5=10**
  
5. Write the principles of canning. Describe the various steps involved in the conventional canning process of fish. **3+7=10**
  
6. Write short notes on **any two** of the following :
  - (a) Packaging and storage of surimi. **2x5=10**
  - (b) Pouched products
  - (c) Smoking
  
7. Discuss about the microbial spoilage of dry salted fish. **10**
  
8. Describe the facilities needed in an ideal fish landing centre. **10**

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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

00037

**Term-End Examination**

**December, 2017**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : (i) Attempt any five questions only.*

*(ii) All questions carry equal marks.*

- 
1. Discuss about the important commercial marine fishes and prawns of India. **10**
  2. Write short notes on any two of the following :
    - (a) Protein Efficiency Ratio (PER) **2x5=10**
    - (b) K-Value as an index of freshness
    - (c) Odour changes during spoilage of fish
  3. Describe the different types of Ice used for chilling of fish. **10**
  4.
    - (a) Define canning. Give its advantages. **2+3=5**
    - (b) Describe the different methods of salting of fish. **5**
  5. Write short notes on any two of the following :
    - (a) Freezing of fish **2x5=10**
    - (b) Horizontal Plate Freezer
    - (c) Retort pouches

6. What are synthetic packaging materials ? List them. Explain any two in details.  $2+4+4=10$
7. Write short notes on **any two** of the following :  $2 \times 5 = 10$
- (a) Vacuum packaging
  - (b) Packaging of frozen food products
  - (c) Flexible packaging materials
8. (a) Identify the factors which are relevant in the development of new food products. 5
- (b) Describe the factors influencing Value Addition. 5



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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS TECHNOLOGY  
(DFPT)**

**Term-End Examination**

**June, 2018**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

*Note : (i) Attempt any five questions only.*

*(ii) All questions carry equal marks.*

- 
1. (a) Name any five Institutions involved in Fisheries Research and development in India. **5**
  - (b) Give the proximate composition of fishes. **5**
  2. Discuss about the different chemical methods used for evaluation of spoilage of fish. **10**
  3. Write short notes on any two of the following : **2x5=10**
    - (a) Advantages of using Ice for chilling fish
    - (b) Parameters evaluated to test the sensory qualities of raw fish
    - (c) Exhausting
  4. Describe the method of smoking of fish. **10**



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**BPVI-041**

**DIPLOMA IN FISH PRODUCTS  
TECHNOLOGY**

**(DFPT)**

**Term-End Examination**

**December, 2019**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND  
VALUE ADDITION**

*Time : 2 Hours*

*Maximum Marks : 50*

*Note : Answer any five questions. All questions  
carry equal marks.*

1. (a) List the different varieties of fishes and shellfish of commercial importance. 5
- (b) Describe the role of fish in human nutrition. 5
2. (a) What are the physical and sensory/odour changes which occur during spoilage of fish? 5
- (b) Define K value. 2

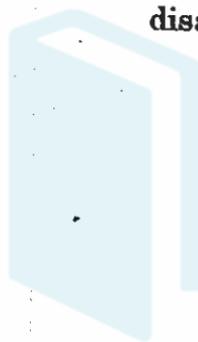
[ 2 ]

BPVI-041

- (c) Expand the following : 3
- (i) TMA
  - (ii) PV
  - (iii) TVN
3. (a) What are the advantages of using ice for chilling fish ? 5
- (b) List the different steps in the conventional canning process. 5
4. (a) Describe the quick salting process. 5
- (b) Define smoking of fish. 2
- (c) Explain the pre-smoking process. 3
5. (a) Differentiate between chilling and freezing. 2
- (b) Define cook-freeze fish products. 2
- (c) Describe the process of pasteurization. Give its uses in fish processing. 6
6. Write short notes on any *two* of the following :  $2 \times 5 = 10$
- (a) High Density Polythene (HDPE)
  - (b) Cellophanes
  - (c) Aseptic Packaging

[3]

7. (a) List the gases used in modified atmospheric packaging of fish products. What are the functions of each gas? 5
- (b) Describe the requirements of packaging of fish curry in frozen form. 5
8. Define Value Addition. Give its need and importance. What are its advantages and disadvantages? 2 + 4 + 4



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**DIPLOMA IN FISH PRODUCTS  
TECHNOLOGY (DFPT)**

**Term-End Examination**

**February, 2021**

**BPVI-041 : INTRODUCTION TO FISH,  
PROCESSING, PACKAGING AND VALUE  
ADDITION**

*Time : 2 hours*

*Maximum Marks : 50*

**Note :**

*Attempt any **five** questions.*

*All questions carry equal marks.*

- 
- 
1. (a) Describe the role of Fish in human nutrition. 5
- (b) Write a short note on rigor mortis. 5
2. (a) Describe the conventional canning process. 5
- (b) List any 10 important commercial marine fishes and prawns of India. 5

3. (a) Explain the different traditional methods of salting for preservation of fish. 5
- (b) What are the packaging requirements for frozen fish products ? 5
4. (a) List the different synthetic packaging materials. Explain any one in detail. 3+3
- (b) Describe Aseptic Packaging. 4
5. Write short notes on any **two** of the following :  $2 \times 5 = 10$
- (a) Freezing curve
- (b) Flexible packaging materials
- (c) Factors influencing value addition
6. (a) What are the facilities needed in an ideal landing centre ? 5
- (b) Write a short note on live fish transport. 5
7. (a) Describe the functioning of air blast freezer. Give its advantages and disadvantages. 5
- (b) Define Retort Pouch. Give its advantages. 2+3
8. Write short notes on any **two** :  $2 \times 5 = 10$
- (a) Active Packaging
- (b) Cook-Freeze Fish Products
- (c) Natural Packaging