

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)Syllabus & Title of the paper**

SEMESTER-V/VI						
GENERAL COMPONENTS						
No.	TITLE	Credits	Hours Week	Internal marks	External marks	Total
1	Chemistry	4T	4T	25	75	100
	Chemistry practical – V	1P	2P	25	25	50
2	Chemistry	4T	4T	25	75	100
	Chemistry practical – VI	1P	2P	25	25	50
3	Zoology	4T	4T	25	75	100
	Zoology practical – V	1P	2P	25	25	50
4	Zoology	4T	4T	25	75	100
	Zoology practical – VI	1P	2P	25	25	50
5	Aquaculture nutrition	4T	4T	25	75	100
	Aqua practical	1P	2P	25	25	50
6	Inland & marine fisheries	4T	4T	25	75	100
	Aqua practical	1P	2P	25	25	50
7	Fish genetics & aquaculture bio Techonology	4T	4T	25	75	100
	Aqua practical	1P	2P	25	25	50
8	Field work / Project	5F/P			200	200

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MAY YOUR KNOWLEDGE BECOME BRILLIANT



SEMESTER - V

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

AQUACULTURE NUTRITION

Credits 4

Teaching Hours 4

OBJECTIVES:	LEARNING OUT COME
<ul style="list-style-type: none"> □ To provide a basic understanding about fish nutrition. □ Provide the knowledge on the Fish feeding physiology, nutritional requirements. □ Providing the basic knowledge on the feed composition, formulation of nutritionally balanced feed, production and use of live feed for optimal production. 	<ul style="list-style-type: none"> ➤ Student will learn the concept of the fish nutrition, ➤ Knowledge on the physiology of fish feeding and nutritional requirements will be learnt by the students. ➤ Knowledge on the fish feed composition, formulation and balanced diet will be learned.

Unit 1: Nutritional Requirements of Fish

Principles of fish nutrition (Proteins, Carbohydrates and lipids)
Vitamin and mineral requirements, vitamin C for fish and shell fishes.
Feeds and feed additives

Unit 2: Feed ingredients & quality

Different feed ingredients
Types of feeds, Compounded feeds, pellets, crumbles and microencapsulated feed.
Storage, quality standards, proximate composition.
Digestibility studies and methods.

Unit 3: Feed & Feed Manufacturing

Feed formulation - methods, square method.
Feed manufacturing processes, Extrusion, Pelletization.

Unit 4: Feed Management

Feed schedule in finfish and shellfish, calculations and daily ration.
Artificial feed formulations of different cultural species.
Feed Check tray observations and management.

Unit 5: Feed Quality

Feed energetic, Feed Conversion Efficiency(FCE), Protein Efficiency Ratio (PER),
Feed Conversion Ratio (FCR), Net Protein Utilization NPU, leaching,
Water stability. Quality standards

Suggested reading

1. Brown E.E Fish Farming Handbook
2. Milne P.H. Fish and shell fish farming in coastal waters
3. CMFRI manual on research methods for fish and shellfish nutrition
4. Borgstorm,G. Fish as Food
5. Heen,E and Kreuzer,R. Fish in Nutrition
6. Shepherd,J and Brommage,W. Intensive Fish Farming Techniques
7. Hephher,B. and Pruginin,Y. Commercial Fish Farming

Supplementary Reading

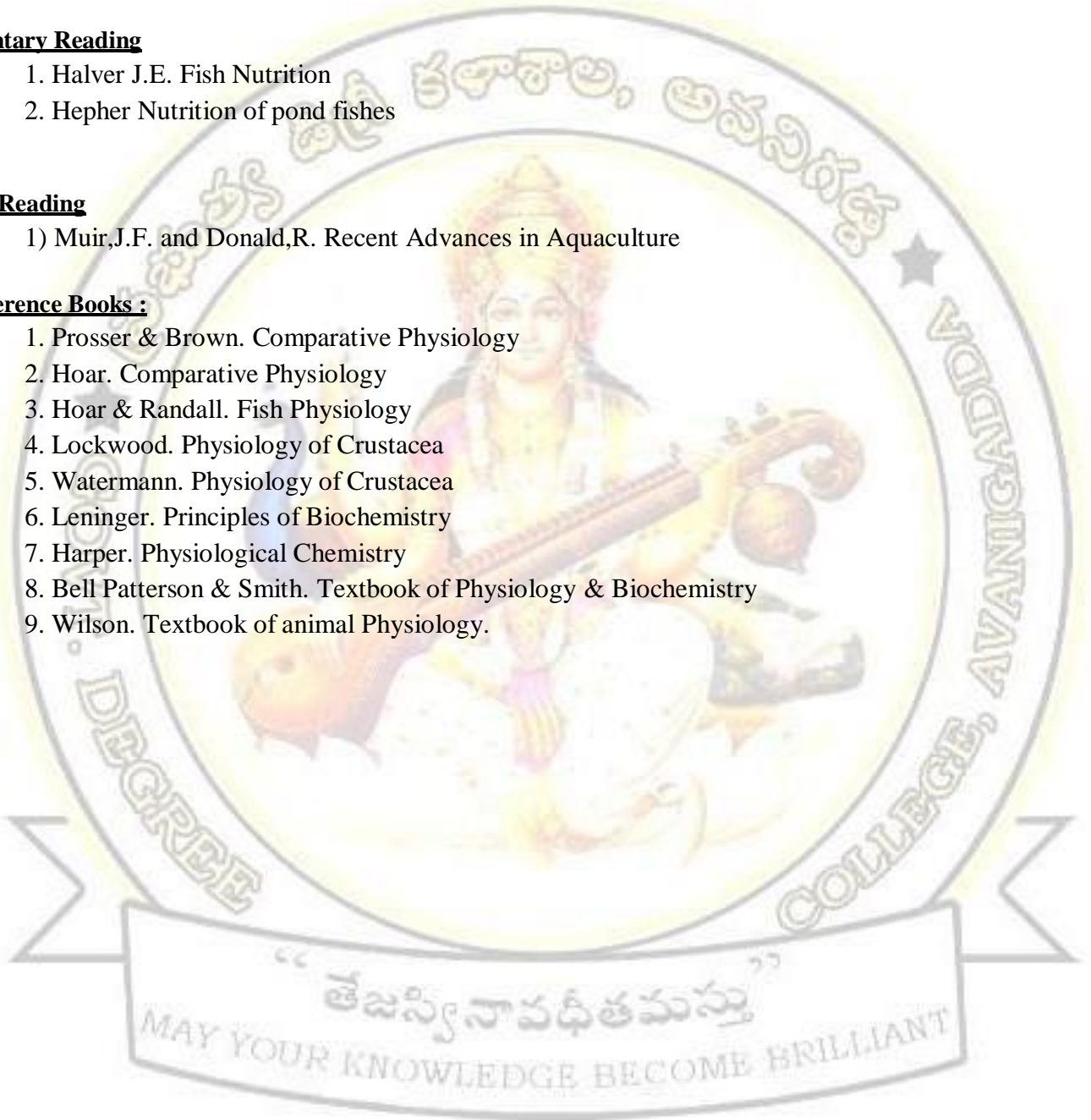
1. Halver J.E. Fish Nutrition
2. Hephher Nutrition of pond fishes

Advanced Reading

- 1) Muir,J.F. and Donald,R. Recent Advances in Aquaculture

Other Reference Books :

1. Prosser & Brown. Comparative Physiology
2. Hoar. Comparative Physiology
3. Hoar & Randall. Fish Physiology
4. Lockwood. Physiology of Crustacea
5. Watermann. Physiology of Crustacea
6. Leninger. Principles of Biochemistry
7. Harper. Physiological Chemistry
8. Bell Patterson & Smith. Textbook of Physiology & Biochemistry
9. Wilson. Textbook of animal Physiology.



**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

AQUACULTURE NUTRITION

Theory- Internal

Total Marks: 25

- 1 Internals (2) Best of Two**
- 2. Assignments (5)**
- 3. Seminar**
- 4. Attendance**

: 10 marks

: 5x1=5marks

: 5 marks

: 5marks

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
AQUACULTURE NUTRITION**

Aquaculture :Theory-

External Total Marks: 75

Section –A

Short Answer questions 1 to 8 (Any 5 from given 10)

5x5=25

Section –B

Essay Questions 9 to 13 (With internal choice)

5x10=50

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GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Question Paper Blue Print
Semester-V

AQUACULTURE NUTRITION

BLUE PRINT MODEL FOR EXTERNAL EXAMINATIONS 75Marks

	Section A Short Questions			Section B Essay Questions		
	NO OF QUESTIONS	MARKS ALLOTTED FOR EACH QUESTION	TOTAL MARKS	NO OF QUESTIONS	MARKS ALLOTTED FOR EACH QUESTION	TOTAL MARKS
UNIT -I	02	5	10	02	10	20
UNIT-II	02	5	10	02	10	20
UNIT-III	02	5	10	02	10	20
UNIT-IV	1	5	5	02	10	20
UNIT-V	1	5	5	02	10	20

Section-A: Questions numbers 1 to 8

Out of 10 Questions 5 has to be answered.

Section-B: Questions numbers 9 to 13,

Internal Choice (either / or) and 5 Questions has to be answered.

1. Short Questions : 5 X 5 = 25

2. Essay Questions : 5 X 10 = 50

Total : 75

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GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
MODEL QUESTION PAPER

.TITLE: AQUACULTURE NUTRITION

I. Answer any FIVE of the following :

5x5=25

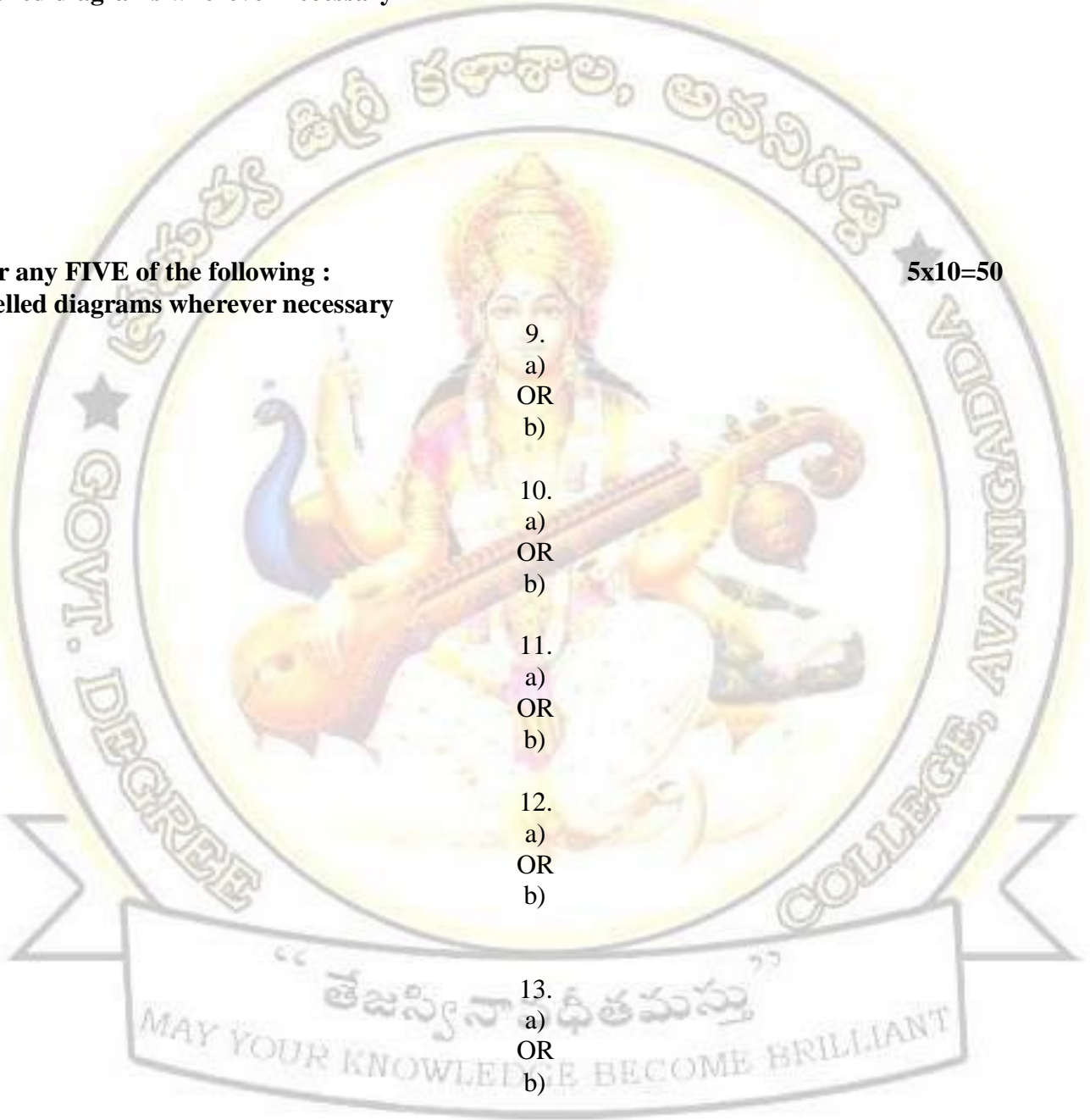
Draw labelled diagrams wherever necessary

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

II. Answer any FIVE of the following :

5x10=50

Draw labelled diagrams wherever necessary



9.

a)

OR

b)

10.

a)

OR

b)

11.

a)

OR

b)

12.

a)

OR

b)

13.

a)

OR

b)

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

Practical syllabus

AQUACULTURE NUTRITION

I. Feed management (Proximate Analysis)

1. Estimation of Crude proteins in fish feed.
2. Estimation of carbohydrates
3. Estimation of Fats
4. Estimation of Ash content
5. Estimation fiber

II. Preparation of supplementary feeds with locally available ingredients,

III. Determination of water stability of pellet feeds.

V. Feed calculation and daily ration

VI. Check-trays in shrimp farming ponds.

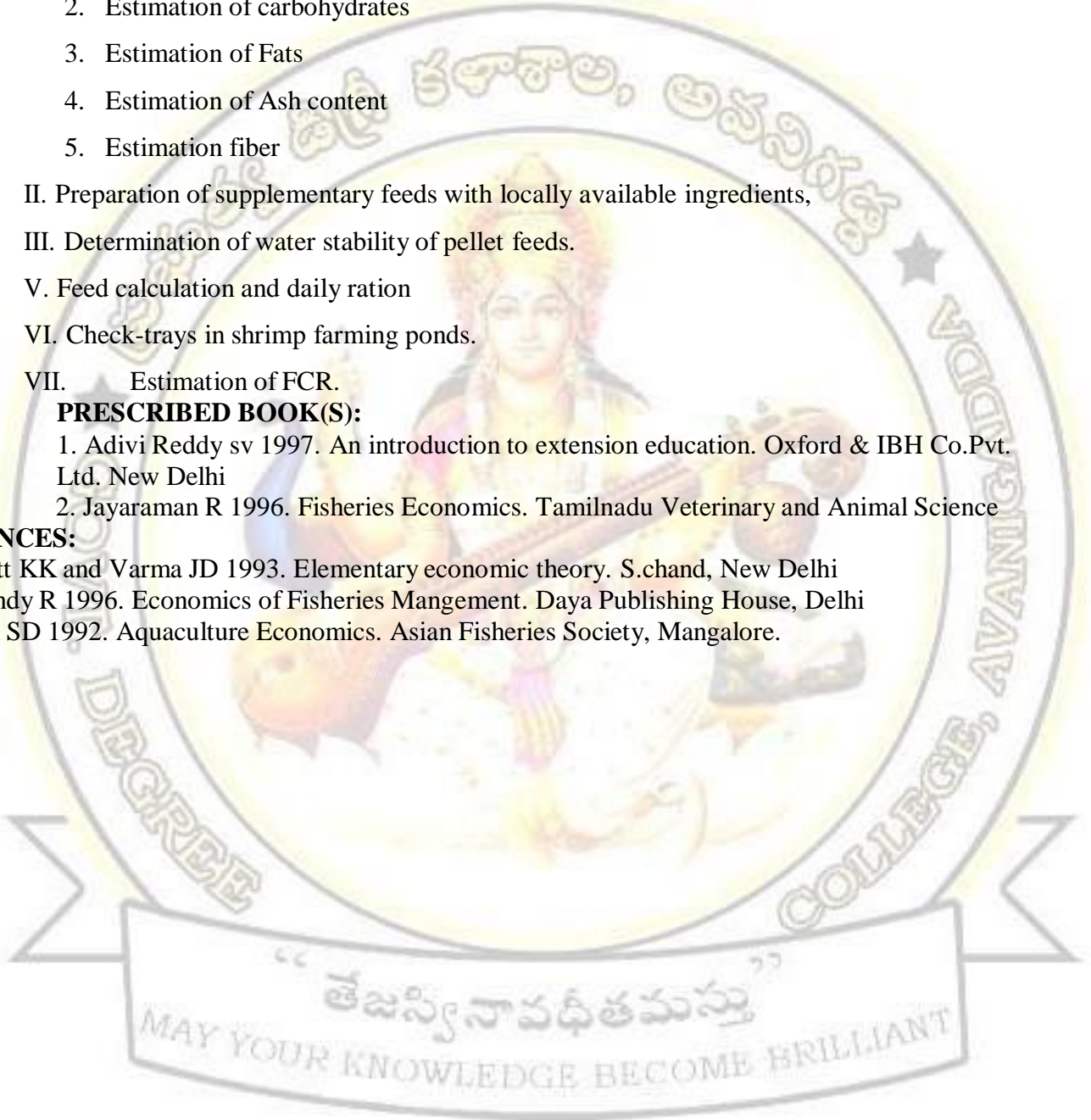
VII. Estimation of FCR.

PRESCRIBED BOOK(S):

1. Adivi Reddy sv 1997. An introduction to extension education. Oxford & IBH Co.Pvt. Ltd. New Delhi
2. Jayaraman R 1996. Fisheries Economics. Tamilnadu Veterinary and Animal Science

REFERENCES:

1. Dewwett KK and Varma JD 1993. Elementary economic theory. S.chand, New Delhi
2. Korakandy R 1996. Economics of Fisheries Mangement. Daya Publishing House, Delhi
3. Tripathi SD 1992. Aquaculture Economics. Asian Fisheries Society, Mangalore.



GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)

AQUACULTURE NUTRITION

Practical's – Internal:

Time: 2 hrs.

Total Marks: 25

1. Identification of given sample : 6 marks
2. Identification of given sample : 6 marks
3. Identification (2) : 5 marks (2x2 1/2)
4. Record : 5 marks
5. Viva voce : 3 marks

Practical's – External :

Total Marks: 25

1. Assessment including viva voce : 6 marks
2. Record : 6 marks
3. Field note book : 5 marks
4. Project : 8 marks

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
AQUACULTURE NUTRITION

Time: 2hrs

Max.Marks:25

PRACTICAL MODEL PAPER

- | | | |
|-----|-----------|---------|
| I. | | 10marks |
| IX. | `Identify | 10marks |
| X. | Record | 5marks |

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**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

INLAND AND MARINE FISHERIES

Credits 4

Teaching Hours 4

OBJECTIVES:	LEARNING OUT COME
<ul style="list-style-type: none"> ➤ To study the Riverine, Reservoir and Estuarine fisheries. ➤ To understand pelagic fishery resources and demersal resources 	<ul style="list-style-type: none"> ➤ Student learns the knowledge on the inland fishery resources ➤ Student learns the knowledge on the pelagic and demersal fishery resources

Unit 1: Riverine and Estuarine Fisheries

Riverine fisheries – Major river systems in India, important characteristic features of Rivers
 Estuarine fisheries- definition, Ecological significance of estuary, Biota of estuary, classification and categories of estuaries- capture fisheries- resident and migrant species.

Unit 2: Reservoir and Lakesterine Fisheries

Reservoir fisheries- Major reservoirs in India- important characteristic features of reservoirs.
 Lakesterine fisheries- definition, Types of lakes based on circulation, nutrients and surface temperature.

Unit 3: Coastal fisheries

Coastal fisheries – Elasmobranch fishery; Teleost fishery- Sardines, Anchovies, Mackerel, Mumbai duck, Catfishes, Eels, Ribbon fish, Perches, Mulletts, Polnemids, Pomfrets, Scianids, Seer fishes, Flying fishes

Unit 4: Marine Pelagic, Demersal and Deep Sea Resources

Pelagic resources and Major demersal resource groups- elasmobranchs, cephalopods, silver bellies, flat fishes, crabs, sciaenids, pomfrets, bombay duck, prawns, lobsters, molluscan resources.
 Introduction-Fisheries potential, Major Deep sea resources and scope of their exploitation, Present fishing pattern and deep sea fishing in India

Suggested Reading:

Core reading

1. Jhingran, V.G. 1993. Fish and fisheries of India. Hindustan Publishing Corporation (India), New Delhi.
2. Ricker, W.E. 1984. Methods for assessment of fish production in freshwaters. Blackwell Publications.
3. Srivastava, C.B.L., 1985. Textbook of Fishery Science and Indian Fisheries.

Kutub

Mahal Publications, Allahabad.

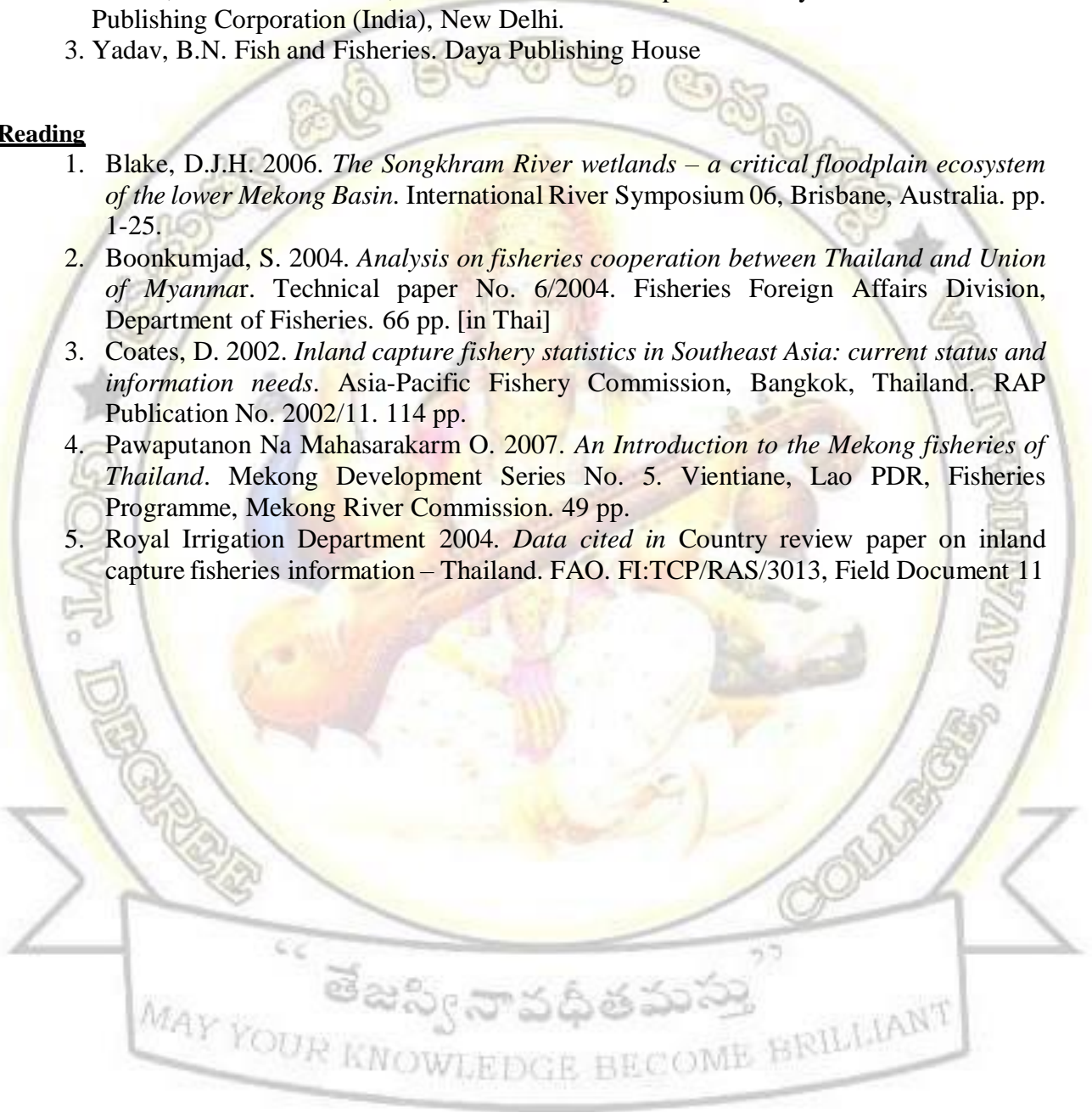
4. S.S. Khanna. An introduction to fishes
5. Kurian, C.V. and Sebastian, V.O. 1986. Prawns and prawn fishery of India. Hindustan Publishing Corporation (India), New Delhi.
6. Yadav, B.N. Fish and Fisheries. Daya Publishing House

Supplementary Reading

1. S.S. Khanna. An introduction to fishes
2. Kurian, C.V. and Sebastian, V.O. 1986. Prawns and prawn fishery of India. Hindustan Publishing Corporation (India), New Delhi.
3. Yadav, B.N. Fish and Fisheries. Daya Publishing House

Advanced Reading

1. Blake, D.J.H. 2006. *The Songkhram River wetlands – a critical floodplain ecosystem of the lower Mekong Basin*. International River Symposium 06, Brisbane, Australia. pp. 1-25.
2. Boonkumjad, S. 2004. *Analysis on fisheries cooperation between Thailand and Union of Myanmar*. Technical paper No. 6/2004. Fisheries Foreign Affairs Division, Department of Fisheries. 66 pp. [in Thai]
3. Coates, D. 2002. *Inland capture fishery statistics in Southeast Asia: current status and information needs*. Asia-Pacific Fishery Commission, Bangkok, Thailand. RAP Publication No. 2002/11. 114 pp.
4. Pawaputanon Na Mahasarakarm O. 2007. *An Introduction to the Mekong fisheries of Thailand*. Mekong Development Series No. 5. Vientiane, Lao PDR, Fisheries Programme, Mekong River Commission. 49 pp.
5. Royal Irrigation Department 2004. *Data cited in Country review paper on inland capture fisheries information – Thailand*. FAO. FI:TCP/RAS/3013, Field Document 11



**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
INLAND AND MARINE FISHERIES**

Theory- Internal

Total Marks: 25

1 Internals (2) Best of Two

: 10 marks

2. Assignments (5)

: 5x1=5marks

3. Seminar

: 5 marks

4. Attendance

: 5marks

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
INLAND AND MARINE FISHERIES**

Aquaculture :Theory-

External Total Marks: 75

Section –A

Short Answer questions 1 to 8 (Any 5 from given 10)

5×5=25

Section –B

Essay Questions 9 to 13 (With internal choice)

5×10=50

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**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Question Paper Blue Print
Semester-V**

INLAND AND MARINE FISHERIES

BLUE PRINT MODEL FOR EXTERNAL EXAMINATIONS 75Marks

	Section A Short Questions			Section B Essay Questions		
	NO OF QUESTIONS	MARKS ALLOTTED FOREACH QUESTION	TOTAL MARKS	NO OF QUESTIONS	MARKS ALLOTTED FOREACH QUESTION	TOTAL MARKS
UNIT -I	02	5	10	02	10	20
UNIT-II	02	5	10	02	10	20
UNIT-III	02	5	10	02	10	20
UNIT-IV	02	5	10	02	10	20

Section-A: Questions numbers 1 to 8

Out of 10 Questions 5 has to be answered.

Section-B: Questions numbers 9 to 13,

Internal Choice (either / or) and 5 Questions has to be answered.

1. ShortQuestions : 5 x 5 = 25

2. EssayQuestions : 5 x 10 = 50

Total : 75

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
MODEL QUESTION PAPER
. INLAND AND MARINE FISHERIES

I. Answer any FIVE of the following :

5x5=25

Draw labelled diagrams wherever necessary

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

II. Answer any FIVE of the following :

5x10=50

Draw labelled diagrams wherever necessary

9.

a)

OR

b)

10.

a)

OR

b)

11.

a)

OR

b)

12.

a)

OR

b)

13.

a)

OR

b)

GOVERNMENT DEGERR COLLEGE

AVANIGADDA

B.Voc.(Aquaculture)

SEMESTER – V

INLAND AND MARINE FISHERIE

Periods:24

Max. Marks: 50

PRACTICALS: SYLLABUS

- 
- I. Identification of Reservoir Fisheries
1. *Labeo rohita*, *L. calbasu*,
2. *Cirrhinus mrigala*
3. Catla catla
- II. Identification of Estuarine Fisheries
1. Chanos
2. Lates
3. Mulletts
- III. Identification of Marine Fisheries
a. Pelagic Fisheries (3 to 5 species)
b. Demersal Fisheries (3 to 5 species)
c. Deep sea Fisheries (3 to 5 species)

PRESCRIBED BOOK(S):

1. Adivi Reddy sv 1997. An introduction to extension education. Oxford & IBH Co.Pvt. Ltd. New Delhi
2. Jayaraman R 1996. Fisheries Economics. Tamilnadu Veterinary and Animal Science University. Tuticorn
3. Subba Rao N 1986. Economics of Fisheries. Daya publishing house, Delhi

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
SEMESTER – V

Practical's – External:

Time: 3 hrs.

Total Marks: 25

1. Identification of given sample : 6 marks
2. Identification of given sample : 6 marks
3. Identification (2) : 5 marks (2x2 1/2)
4. Record : 5 marks
5. Viva voce : 3 marks

Practical's – Internal :

Total Marks: 25

1. Assessment including viva voce : 6 marks
2. Record : 6 marks
3. Field note book : 5 marks
4. Project : 8 marks

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)

Time : 2hrs

Max.Marks:25

PRACTICAL MODEL PAPER

I. the following specimens and write a short notes on their commercial importance

4x5=20M

- a.
- b.
- c.
- d.
- e.
- f.

III. Record

05 marks

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Question Paper Blue Print
Semester-V**

FISH GENETICS AND AQUACULTURE BIOTECHNOLOGY

Credits 4

Teaching Hours 4

OBJECTIVES:	LEARNING OUT COME
<ul style="list-style-type: none"> ➤ To provide basic idea about the principles of genetics and depict the hereditary mechanism in cultured species. ➤ To acquaint with the state of the art techniques in biotechnology as applied to aquaculture industry. 	<ul style="list-style-type: none"> ➤ Student will learn the concept of Medalian genetic principles ➤ Knowledge on heredity determination will be learnt. ➤ Principles of Biotechnology and its applications in the aquaculture will be learnt

Unit 1: Basic Genetics and Biotechnology

- . Introduction- Genetics, Mendel's law of inheritance, interaction of gene. Supplementary and complementary genes.
- . Introduction to Biotechnology in Aquaculture.

Unit 2: Selection and Hybridization

Introduction-Hybridization of fish-Indian studies; Objectives of fish hybridization
Interspecific hybrids, Intergeneric hybrids among Indian carps.
Hybrid vigor, Inbreeding, cross-breeding and hybridization

Unit 3: Sex determination & Chromosome manipulation in fish and shell fishes

Practical application of genetics in aquaculture. Genetics of sex determination in fish.
Gonochorism, Hermaphroditism, Protandry, Protogyni, Environmental Influence of Sex Determination.
Induction of Gynogenesis and Androgenesis, Performance of Gynogens and Androgens, Monosex Populations.

Unit 4: Aquaculture Biotechnology

Recombinant DNA technology, determinants of DNA replication, cloning, vectors, transformation. Gene manipulation in fish, transgenic fish production.
Use of PCR for the detection of white spot syndrome in shrimp.
Cryopreservation technique in Aquaculture.

Unit 5: Marine Biotechnology

Introduction-Scope and the present status of marine biotechnology;
Industries Based on Marine Biotechnology
Use of probiotics and antibiotics in aquaculture operations.

Suggested reading

1. Karinasagar I, Karunasagar I and Reily A. Aquaculture Biotechnology
2. Varun Mehta. Fisheries and Aquaculture biotechnology
3. Pandian TD, Kumar A and Prasad K. Aquaculture and Biotechnology
4. Lopes L.- Gene transfer in aquatic organisms
5. Singleton – Elementary Genetics
6. Gjedrem T- Genetics in aquaculture
7. Gupta,S.C. and Kapoor,V.K. Fundamentals of Applied Statistics.
8. Snedecor and Cochran,W.G. Statistical Methods.

Supplementary Reading

1. Sandhya Mitra- Genticis
2. Varma and Agarwal- Genetics
3. Rath RK- Freshwater Aquaculture

Advance Reading

1. NBFGR- Training manual for DNA finger printing
2. Gupta PK- Elements of Biotechnology
3. Padhi BR – Genetics and Aquaculture

Reference Text Books :

1. Hopher, B. and Y. Pruginin. Commercial fish farming. John Wiley & Sons Inc., 1981.
2. Jhingran, V.G. Fish and Fisheries of India, 1982.
3. Bhattacharya, S. Hormones in Pisciculture. Biology Education. Vol.9, No.1, pp.31-41, 1992.
4. Subramonium, T. Endocrine regulation of reproduction and molting in crustacean and its importance in shrimp aquaculture development.
5. Summer School Manuals of CIFE. Recent Developments in Biotechnology. CIFE, 1998.
6. Genetics and Biotechnological tools in Aquaculture and Fisheries, CIFE, 1998.
7. I.C.A.R. Biotechnology in Aquaculture – Training Manual. CIKA, Bhubaneswar, 1992.
8. Darnell. Molecular Cell Biology.

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
FISH GENETICS AND AQUACULTURE BIOTECHNOLOGY**

Theory- Internal

Total Marks: 25

1 Internals (2) Best of Two

: 10 marks

2. Assignments (5)

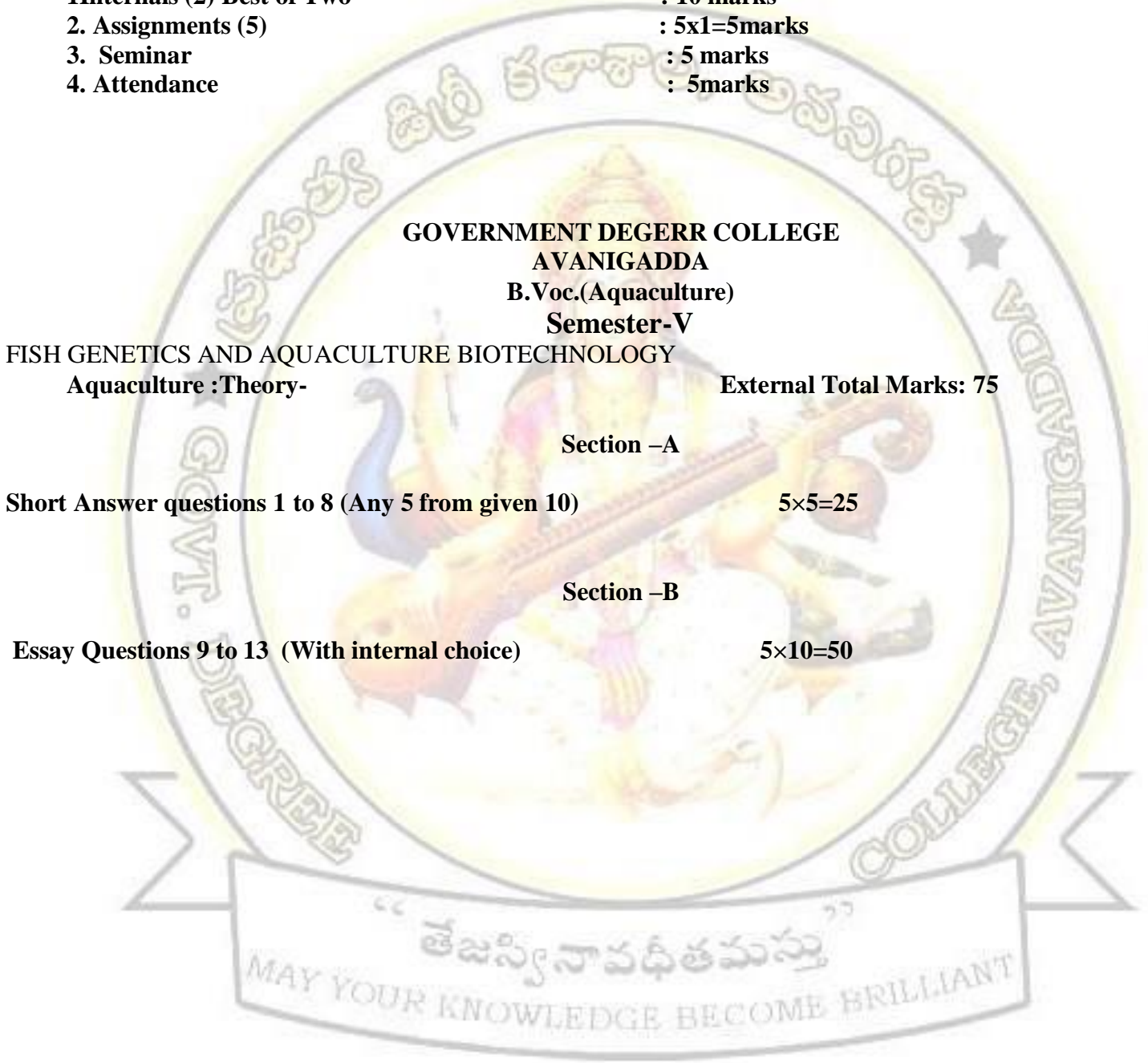
: 5x1=5marks

3. Seminar

: 5 marks

4. Attendance

: 5marks



**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

FISH GENETICS AND AQUACULTURE BIOTECHNOLOGY

Aquaculture :Theory-

External Total Marks: 75

Section –A

Short Answer questions 1 to 8 (Any 5 from given 10)

5x5=25

Section –B

Essay Questions 9 to 13 (With internal choice)

5x10=50

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Question Paper Blue Print
Semester V

FISH GENETICS AND AQUACULTURE BIOTECHNOLOGY
BLUE PRINT MODEL FOR EXTERNAL EXAMINATIONS 75Marks

	Section A Short Questions			Section B Essay Questions		
	NO OF QUESTIONS	MARKS ALLOTTED FOREACH QUESTION	TOTAL MARKS	NO OF QUESTIONS	MARKS ALLOTTED FOREACH QUESTION	TOTAL MARKS
UNIT -I	02	5	10	02	10	20
UNIT-II	02	5	10	02	10	20
UNIT-III	02	5	10	02	10	20
UNIT-IV	1	5	5	02	10	20
UNIT-V	1	5	5	02	10	20

Section-A: Questions numbers 1 to 8

Out of 10 Questions 5 has to be answered.

Section-B: Questions numbers 9 to 13,

Internal Choice (either / or) and 5 Questions has to be answered.

1. ShortQuestions : 5 X 5 = 25

2. EssayQuestions : 5 X 10 = 50

Total : 75

GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V
MODEL QUESTION PAPER
FISH GENETICS AND AQUACULTURE BIOTECHNOLOGY

I. Answer any FIVE of the following :

5x5=25

Draw labelled diagrams wherever necessary

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

II. Answer any FIVE of the following :

5x10=50

Draw labelled diagrams wherever necessary

9.

a)

OR

b)

10.

a)

OR

b)

11.

a)

OR

b)

12.

a)

OR

b)

13.

a)

OR

b)

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Semester-V

PRACTICAL:

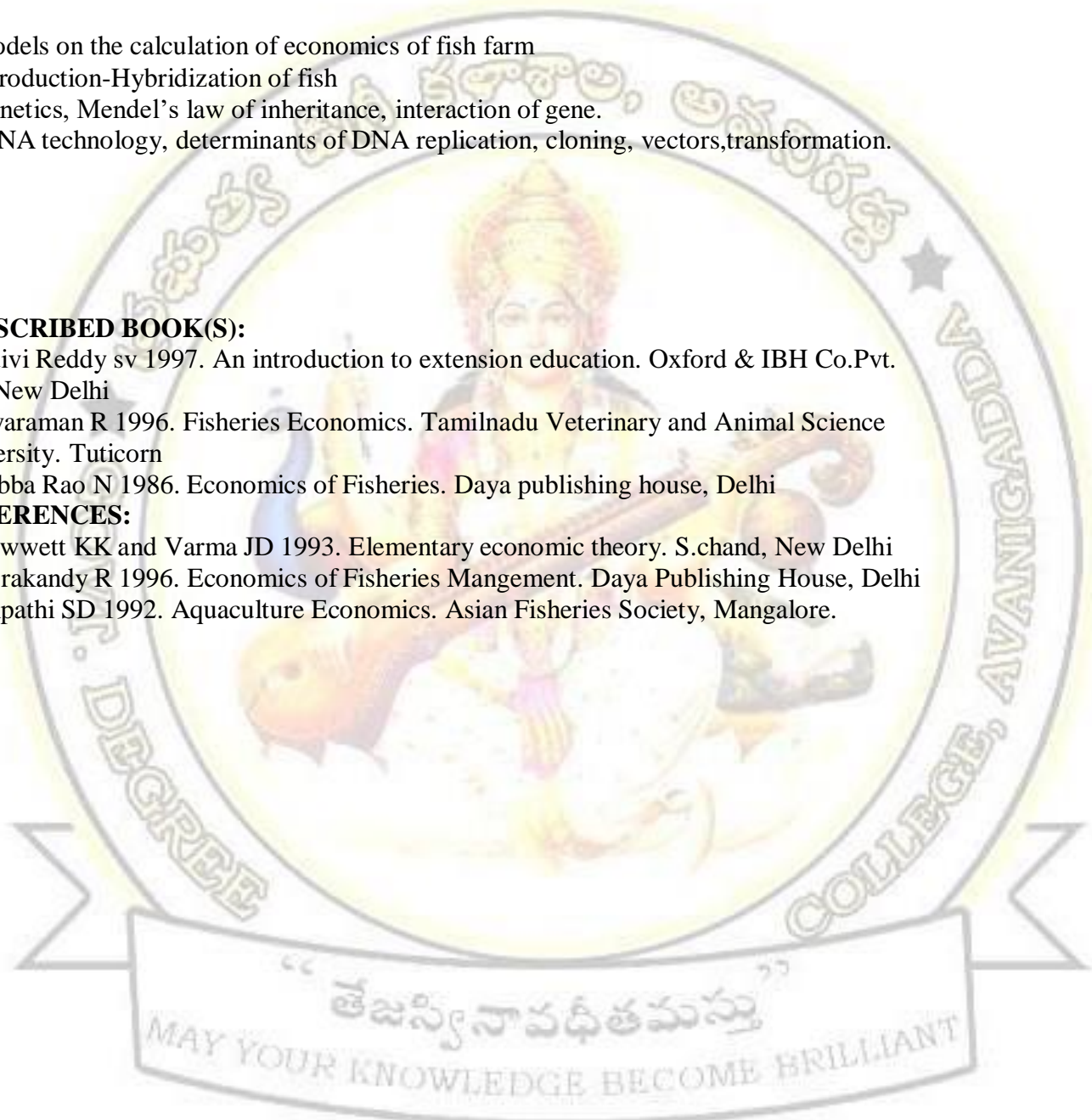
1. Models on the calculation of economics of fish farm
2. Introduction-Hybridization of fish
3. Genetics, Mendel's law of inheritance, interaction of gene.
4. rDNA technology, determinants of DNA replication, cloning, vectors, transformation.

PRESCRIBED BOOK(S):

1. Adivi Reddy sv 1997. An introduction to extension education. Oxford & IBH Co.Pvt. Ltd. New Delhi
2. Jayaraman R 1996. Fisheries Economics. Tamilnadu Veterinary and Animal Science University. Tuticorn
3. Subba Rao N 1986. Economics of Fisheries. Daya publishing house, Delhi

REFERENCES:

1. Dewwett KK and Varma JD 1993. Elementary economic theory. S.chand, New Delhi
2. Korakandy R 1996. Economics of Fisheries Mangement. Daya Publishing House, Delhi
3. Tripathi SD 1992. Aquaculture Economics. Asian Fisheries Society, Mangalore.



**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

Practical's – External:

Time: 2 hrs.

Total Marks: 25

- | | |
|-----------------------------------|---------------------|
| 1. Identification of given sample | : 6 marks |
| 2. Identification of given sample | : 6 marks |
| 3. Identification (2) | : 5 marks (2x2 1/2) |
| 4. Record | : 5 marks |
| 5. Viva voce | : 3 marks |

Practical's – Internal :

Total Marks: 25

- | | |
|-----------------------------------|-----------|
| 1. Assessment including viva voce | : 6 marks |
| 2. Record | : 6 marks |
| 3. Field note book | : 5 marks |
| 4. Project | : 8 marks |

**GOVERNMENT DEGERR COLLEGE
AVANIGADDA
B.Voc.(Aquaculture)
Semester-V**

Time: 2hrs

Max.Marks:25

PRACTICAL MODEL PAPER

- | | | |
|------|----------|---------|
| I. | | 10marks |
| XI. | Identify | 10marks |
| XII. | Record | 5marks |

“ తజస్యినా వేధితమస్తు ”

MAY YOUR KNOWLEDGE BECOME BRILLIANT

**B.JAYA SAI
Lecturer in Aquaculture
G.D.C,AVNIGADDA
9177678905**