

M.B.B.S DEGREE EXAMINATION

July - 2019

First M.B.B.S Examination BIOCHEMISTRY

PAPER-I

Time: 2½ Hours

I. ANSWER THE FOLLOWING QUESTIONS [3 + 4 + 3 = 10]

1. How ammonia is formed in the body ? Explain urea cycle. Add a note on ammonia toxicity. [3 + 4 + 3 = 10]

Sanyanayana (3rd Edn): 335 | Harper (3rd Edn): 276-278 | DM Vasudevan (9th Edn): 272-275

2. Explain how bile acids are synthesised ? Mention the functions of bile acids add a note on steatorrhoea.

Sanyanayana (3rd Edn): 454, 117 | Harper (3rd Edn): 305 | DM Vasudevan (9th Edn): 367, 765

II. WRITE SHORT NOTE ON [5 × 4 = 20]

3. Biochemical functions of glycine.

Sanyanayana (3rd Edn): 341 | DM Vasudevan (9th Edn): 29

4. Amphibolic role of citric acid cycle

Sanyanayana (3rd Edn): 94 | Harper (3rd Edn): 76-78 | DM Vasudevan (9th Edn): 65, 66

5. Competitive inhibition of enzymes and its clinical importance

Sanyanayana (3rd Edn): 33, 132 | Harper (3rd Edn): 161 | DM Vasudevan (9th Edn): 334

6. Anti-oxidants

Sanyanayana (3rd Edn): 33, 132 | Harper (3rd Edn): 332, 204 | DM Vasudevan (9th Edn): 476

7. Hormonal regulation of blood glucose.

Sanyanayana (3rd Edn): 676 | Harper (3rd Edn): 178-180 | DM Vasudevan (9th Edn): 135

II. WRITE BRIEFLY ON [5 × 2 = 10]

8. Name the essential fatty acids

Sanyanayana (3rd Edn): 509 | DM Vasudevan (9th Edn): 255

9. Secondary structure of proteins

Sanyanayana (3rd Edn): 56 | Harper (3rd Edn): 34-41 | DM Vasudevan (9th Edn): 37

10. Active transport system

Sanyanayana (3rd Edn): 627 | Harper (3rd Edn): 468, 469 | DM Vasudevan (9th Edn): 21

11. Sickle cell haemoglobin

Sanyanayana (3rd Edn): 203 | Harper (3rd Edn): 397, 650, 54 | DM Vasudevan (9th Edn): 379

12. Lactose intolerance

Sanyanayana (3rd Edn): 169 | Harper (3rd Edn): 519-520 | DM Vasudevan (9th Edn): 128

Note : Answer all questions : Illustrate your answer with suitable diagrams.

I. ANSWER THE FOLLOWING QUESTIONS [2 × 10 = 20]

1. Describe the process of protein biosynthesis in eukaryotes. Enumerate post transitional modification. [2 × 10 = 20]

Sanyanayana (3rd Edn): 561 | Harper (3rd Edn): 325 | DM Vasudevan (9th Edn): 619

2. What are the sources of carbon and nitrogen atoms of pyrimidine ring? [7 + 3 = 10]

Describe biosynthesis of pyrimidine ribonucleotides. Add a note on its regulation.

Sanyanayana (3rd Edn): 388 | Harper (3rd Edn): 322 | DM Vasudevan (9th Edn): 576, 577, 583

II. WRITE SHORT NOTE ON [5 × 4 = 20]

1. Elaborate tests based on excretory function and synthetic Functions of liver

Sanyanayana (3rd Edn): 453, 459 | Harper (3rd Edn): 366 | DM Vasudevan (9th Edn): 397

2. Immunoglobulin's structure, types and functions

Sanyanayana (3rd Edn): 186 | Harper (3rd Edn): 627 | DM Vasudevan (9th Edn): 693

3. Protein energy malnutrition - features and biochemical investigations.

Sanyanayana (3rd Edn): 516 | DM Vasudevan (9th Edn): 555

4. Describe the role of lungs and kidney in maintaining acid base balance

Sanyanayana (3rd Edn): 476, 477 | DM Vasudevan (9th Edn): 441-443

5. What are oncogenes, proto - oncogenes and anti-oncogenes ? Name 2 oncofetal antigens and their significance.

Sanyanayana (3rd Edn): 659 | Harper (3rd Edn): 683-688 | DM Vasudevan (9th Edn): 711

III. WRITE BRIEFLY ON [5 × 2 = 10]

6. Acute intermittent porphyria - cause and feature

Sanyanayana (3rd Edn): 212 | Harper (3rd Edn): 310 | DM Vasudevan (9th Edn): 364, 365

7. Mutations types and effect

Sanyanayana (3rd Edn): 535 | DM Vasudevan (9th Edn): 630

8. Tubular functions of Kidney

Sanyanayana (3rd Edn): 625 | Harper (3rd Edn): 446 | DM Vasudevan (9th Edn): 648

biochemistry notes

M.B.B.S DEGREE EXAMINATION

October/November - 2018

First M.B.B.S Examination BIOCHEMISTRY

PAPER - I

N T R U H S

Time: 2½ Hours

Max. Marks: 50

Note : Answer all questions : Illustrate your answer with suitable diagrams.

ANSWER THE FOLLOWING QUESTIONS

I. Enumerate source, daily requirement of "Vitamin-A". Describe functions and deficiency manifestations of Vitamin-A. [1 + 1 + 4 + 4 = 10]

Sanyanarayana (5th Edn): 119, 122 | Harper (30th Edn): 529-530 | DM Vasudevan (9th Edn): 488-492

2. Define Jaundice. Mention types of jaundice, causes of jaundice, explain the findings in Urine and blood. [1 + 1 + 3 + 2 = 10]

Sanyanarayana (5th Edn): 456 | Harper (30th Edn): 242 | DM Vasudevan (9th Edn): 370, 397

II. WRITE SHORT NOTE ON

3. Chemosmotic theory. [5 × 4 = 20]

Sanyanarayana (5th Edn): 229 | Harper (30th Edn): 121-124 | DM Vasudevan (9th Edn): 350-353

4. Define detoxification . Write in brief detoxification by different processes with examples. [1 + 5-11/6 | Harper (30th Edn): 479-482]

Sanyanarayana (5th Edn): 614 | Harper (30th Edn): 11.5-11/6 | DM Vasudevan (9th Edn): 479-482

III. Gluconeogenesis.

Sanyanarayana (5th Edn): 258 | Harper (30th Edn): 172 | DM Vasudevan (9th Edn): 139

6. Schematic Presentation of Cholesterol Biosynthesis.

Sanyanarayana (5th Edn): 309 | Harper (30th Edn): 249-253 | DM Vasudevan (9th Edn): 221

7. Enzyme Inhibition.

Sanyanarayana (5th Edn): 87, 92 | Harper (30th Edn): 57, 76-79 | DM Vasudevan (9th Edn): 54, 65

III. WRITE BRIEFLY ON

8. Enumeratic four features of Marasmus. [5 × 2 = 10]

Sanyanarayana (5th Edn): 515 | Harper (30th Edn): 263, 324 | DM Vasudevan (9th Edn): 556

9. Conversion of Propionyl CoA to 4 Carbon compound

10. Biochemical markers for Myocardial Infarction.

Sanyanarayana (5th Edn): 112 | Harper (30th Edn): 567 | DM Vasudevan (9th Edn): 240

11. Rappaport Lubering Cycle.

Sanyanarayana (5th Edn): 251 | DM Vasudevan (9th Edn): 137

12. Hb Derivatives.

Sanyanarayana (5th Edn): 551 | Harper (30th Edn): 338 | DM Vasudevan (9th Edn): 615

Max. Marks: 50

ANSWER THE FOLLOWING QUESTIONS

I.

1. Describe the source, absorption, daily requirements, normal levels, distribution, functions and factors regulating blood calcium levels.

Sanyanarayana (5th Edn): 406 | Harper (30th Edn): 506 | DM Vasudevan (9th Edn): 527-534

- [1 + 1 + 1 + 1 + 3 + 3 = 10]
[2 + 4 + 3 + 1 = 10]

2.

- Structural organization of proteins.

Sanyanarayana (5th Edn): 317 | Harper (30th Edn): 213, 239 | DM Vasudevan (9th Edn): 224

II. WRITE SHORT NOTE ON

3.

- Metabolic acids and respiratory alkalosis.

Sanyanarayana (5th Edn): 481, 482 | Harper (30th Edn): 275 | DM Vasudevan (9th Edn): 446, 449

4.

- Tumor markers with examples.

Sanyanarayana (5th Edn): 662 | Harper (30th Edn): 700-701 | DM Vasudevan (9th Edn): 715

5.

- Structure and function of immunoglobulin's.

Sanyanarayana (5th Edn): 186 | Harper (30th Edn): 627 | DM Vasudevan (9th Edn): 693

6.

- Post transcriptional modification.

Sanyanarayana (5th Edn): 547 | Harper (30th Edn): 3338, 3387 | DM Vasudevan (9th Edn): 611

7.

- Degradation of pyrimidines.

Sanyanarayana (5th Edn): 186 | Harper (30th Edn): 627 | DM Vasudevan (9th Edn): 693

III. WRITE BRIEFLY ON

8.

- Difference between endonuclease and restriction endonuclease.

Harper (30th Edn): 361-369 | DM Vasudevan (9th Edn): 644

9.

- Source of carbon and nitrogen atoms in the purine ring.

Sanyanarayana (5th Edn): 387 | DM Vasudevan (9th Edn): 575, 576

10.

- Nutritional classification of amino acid.

Sanyanarayana (5th Edn): 44 | Harper (30th Edn): 282, 283 | DM Vasudevan (9th Edn): 28, 33

11.

- Xeroderma pigmentosa.

Sanyanarayana (5th Edn): 538 | DM Vasudevan (9th Edn): 603

12.

- Features of genetic code.

Sanyanarayana (5th Edn): 551 | Harper (30th Edn): 338 | DM Vasudevan (9th Edn): 615

M.B.B.S DEGREE EXAMINATION

August - 2013

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - I

Time: 2½ Hours

1. Explain the formation of ATP in electron transport chain with diagram.
Mention ATP synthesizing sites and inhibitors of ETC.

[4 + 2 + 2 + 2 = 10]

Sanyanarayana (5th Edn): 224-225, 227, 233 | Harper (30th Edn): 126-135 | Harper (31st Edn): 118-126

D.M Vasudevan (Pth Edn): 346-347

2. Describe the degradation of glycogen in the body with regulation.
Add a note on glycogen storage disorders.

[4 + 2 + 4 = 10]

Sanyanarayana (5th Edn): 263, 269 | Harper (30th Edn): 178, 183 | Harper (31st Edn): 164-171 |

D.M Vasudevan (Pth Edn): 143, 147

WRITE SHORT NOTE ON

3. Hemoglobinopathies
Ketone bodies as fuel

[5 × 4 = 20]

Sanyanarayana (5th Edn): 203 | Harper (30th Edn): 57, 694 | Harper (31st Edn): 65 | D.M Vasudevan (Pth Edn): 378

Sanyanarayana (5th Edn): 386 | Harper (31st Edn): 207

4. Thiamine sources, functions and deficiency manifestation.

Sanyanarayana (5th Edn): 138 | Harper (30th Edn): 555, 556 | Harper (31st Edn): 533, 534 |

D.M Vasudevan (Pth Edn): 502-503

5. Isoenzymes

Sanyanarayana (5th Edn): 112 | Harper (30th Edn): 66 | Harper (31st Edn): 56-66 | D.M Vasudevan (Pth Edn): 72

PEM and Balanced diet.

Sanyanarayana (5th Edn): 514 | Harper (30th Edn): 421 | D.M Vasudevan (Pth Edn): 555

[5 × 2 = 10]

WRITE BRIEFLY ON

6. Two reactions of detoxification by Hydrolysis.

Sanyanarayana (5th Edn): 615 | Harper (30th Edn): 586 | Harper (31st Edn): 556 | D.M Vasudevan (Pth Edn): 516

7. Two functional roles of Vitamin B₁₂.

Sanyanarayana (5th Edn): 136 | Harper (30th Edn): 555 | Harper (31st Edn): 528 | D.M Vasudevan (Pth Edn): 516

8. Flip ratio

Sanyanarayana (5th Edn): 112 | Harper (30th Edn): 66 | D.M Vasudevan (Pth Edn): 72

9. Brown fat

Sanyanarayana (5th Edn): 456 | Harper (30th Edn): 323 | Harper (31st Edn): 242 | D.M Vasudevan (Pth Edn): 377

10. Functions of Hyaluronic acid.

Sanyanarayana (5th Edn): 23 | Harper (30th Edn): 156 | Harper (31st Edn): 599 | D.M Vasudevan (Pth Edn): 95, 96

11. Isoenzymes

Sanyanarayana (5th Edn): 556 | Harper (30th Edn): 323 | Harper (31st Edn): 242 | D.M Vasudevan (Pth Edn): 72

12. Liposomes

Sanyanarayana (5th Edn): 42 | Harper (30th Edn): 402 | Harper (31st Edn): 204

K N R U H S

August - 2018

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

Note : Answer all questions ; Illustrate your answer with suitable diagrams.

Max. Marks: 50

1. Describe the biological products formed from Tyrosine and tryptophan.

Sanyanarayana (5th Edn): 346, 355 | Harper (30th Edn): 304, 316, 317 | Harper (31st Edn): 286 |

D.M Vasudevan (Pth Edn): 306

2. Describe the mucosal therapy of iron absorption.

Sanyanarayana (5th Edn): 416 | Harper (30th Edn): 541 | D.M Vasudevan (Pth Edn): 537

WRITE SHORT NOTE ON

3. Types of DNA

Sanyanarayana (5th Edn): 76 | Harper (30th Edn): 359-363 | Harper (31st Edn): 338 | D.M Vasudevan (Pth Edn): 593

4. Specialized products derived from glycine.

Sanyanarayana (5th Edn): 342 | Harper (30th Edn): 283 | Harper (31st Edn): 282 | D.M Vasudevan (Pth Edn): 283

Secondary active transport.

Sanyanarayana (5th Edn): 626

5. Polymerization chain reaction.

Sanyanarayana (5th Edn): 534 | Harper (30th Edn): 70, 458, 459 | Harper (31st Edn): 439 |

D.M Vasudevan (Pth Edn): 658

Western blotting.

Sanyanarayana (5th Edn): 577 | Harper (31st Edn): 438

WRITE BRIEFLY ON

6. Functions of Nucleotides.

Sanyanarayana (5th Edn): 69 | Harper (30th Edn): 339-346 | Harper (31st Edn): 321 |

D.M Vasudevan (Pth Edn): 576, 577

Protein folding.

Sanyanarayana (5th Edn): 556 | Harper (30th Edn): 323 | Harper (31st Edn): 242 | D.M Vasudevan (Pth Edn): 72

Obstructive Jaundice.

Sanyanarayana (5th Edn): 456 | Harper (30th Edn): 323 | Harper (31st Edn): 242 | D.M Vasudevan (Pth Edn): 72

Isoenzymes

Sanyanarayana (5th Edn): 42 | Harper (30th Edn): 402 | Harper (31st Edn): 204

Liposomes

Sanyanarayana (5th Edn): 23 | Harper (30th Edn): 156 | Harper (31st Edn): 599 | D.M Vasudevan (Pth Edn): 95, 96

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M.B.B.S DEGREE EXAMINATION

July - 2018

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - I

N T R U H S

M.B.B.S DEGREE EXAMINATION

July - 2018

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Explain the classification of enzymes citing examples. Give an account on the enzymes of diagnostic importance. [5 + 5 = 10]
Sayanaarayana (3rd Edn): 88, 89 | Harper (31st Edn): 57, 64 | DM Vasudevan (9th Edn): 53, 54
 2. Describe the metabolism of low density lipoprotein (LDL). Add a note on hypercholesterolemia. [7 + 3 = 10]
Sayanaarayana (5th Edn): 39, 319, 317 | Harper (31st Edn): 237, 257
- WRITE SHORT NOTE ON** [5 × 4 = 20]
3. Homopolysaccharides
 4. Electron transport chain
 5. Functions of vitamin C
 6. Importance of HMP pathway
 7. Bilirubin excretion
- WRITE BRIEFLY ON** [5 × 2 = 10]
8. List any four pathways located in mitochondria
 9. Functions of vitamin K
- WRITE BRIEFLY ON** [5 × 2 = 10]
10. Importance of Rapoport Luebering cycle
 11. List any four causes of hypotrichilrubinemia
 12. List any four conjugating agents of phase II detoxification
- ANSWERS:**
1. Describe the replication of DNA with illustration. [8 + 2 = 10]
Sayanaarayana (3rd Edn): 524, 525 | Harper (31st Edn): 351 | DM Vasudevan (9th Edn): 514, 515
 2. Discuss the role of buffers and history in pH homeostasis. [7 + 3 = 10]
Sayanaarayana (5th Edn): 147
- WRITE SHORT NOTE ON** [5 × 4 = 20]
3. Liver function tests
 4. Metabolic acidosis
 5. Purins catabolism
 6. Structure of immunoglobulin
 7. Structure of plasma membrane
- WRITE BRIEFLY ON** [5 × 2 = 10]
8. List the special products derived from glycines
 9. Phenylketonuria
 10. Write the normal values of serum calcium and potassium
 11. List four iron containing proteins
 12. List four antioxidants
- ANSWERS:**
1. Sayanaarayana (5th Edn): 344 | Harper (31st Edn): 473 | DM Vasudevan (9th Edn): 223
 2. Sayanaarayana (5th Edn): 187 | Harper (31st Edn): 659 | DM Vasudevan (9th Edn): 633
 3. Sayanaarayana (5th Edn): 315 | Harper (31st Edn): 334 | DM Vasudevan (9th Edn): 352
 4. Sayanaarayana (5th Edn): 423 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 466
 5. Sayanaarayana (5th Edn): 424 | Harper (31st Edn): 511 | DM Vasudevan (9th Edn): 397
 6. Sayanaarayana (5th Edn): 118 | DM Vasudevan (9th Edn): 346, 354
 7. Sayanaarayana (5th Edn): 528, 539 | DM Vasudevan (9th Edn): 519, 521
 8. Sayanaarayana (5th Edn): 135, 137 | Harper (31st Edn): 118 | DM Vasudevan (9th Edn): 346, 354
 9. Sayanaarayana (5th Edn): 223 | Harper (31st Edn): 182 | DM Vasudevan (9th Edn): 147
 10. Sayanaarayana (5th Edn): 272 | Harper (31st Edn): 182 | DM Vasudevan (9th Edn): 311
 11. Sayanaarayana (5th Edn): 134 | Harper (31st Edn): 522, 532, 533 | DM Vasudevan (9th Edn): 413
 12. Sayanaarayana (5th Edn): 615 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 475

M.B.B.S DEGREE EXAMINATION

November/December - 2017

First M.B.B.S Examination

N T R U H S

BIOCHEMISTRY

PAPER - I

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Describe HMP pathway, its metabolic significance and add a note on glucose6 phosphate dehydrogenase deficiency. [6+2+2=10]
Sayyanarayana (5th Edn): 270, 274 | Harper (31st Edn): 180, 185, 335 | DM Vaidyanathan (9th Edn): 147
 2. Classify enzymes with examples and write in detail the diagnostic importance of enzymes. [6+4=10]
Sayyanarayana (5th Edn): 88, 92 | Harper (31st Edn): 51, 63-65 | DM Vaidyanathan (9th Edn): 53, 54
- WRITE SHORT NOTE ON**
3. Functions of cholesterol
Sayyanarayana (5th Edn): 309 | Harper (31st Edn): 202 | DM Vaidyanathan (9th Edn): 221
 4. Pellagra
Sayyanarayana (5th Edn): 141 | Harper (31st Edn): 534, 535 | DM Vaidyanathan (9th Edn): 507
 5. Hemoglobinopathies
Sayyanarayana (5th Edn): 203 | Harper (31st Edn): 53, 54 | DM Vaidyanathan (9th Edn): 370
 6. Oxidative phosphorylation
Sayyanarayana (5th Edn): 228 | Harper (31st Edn): 620 | DM Vaidyanathan (9th Edn): 350
 7. Kwashiorker
Sayyanarayana (5th Edn): 513 | Harper (31st Edn): 263, 524, 525 | DM Vaidyanathan (9th Edn): 555, 556
- [5 x 2 = 10]**
8. Lipotropic factors
Sayyanarayana (5th Edn): 324 | Harper (31st Edn): 244 | DM Vaidyanathan (9th Edn): 212
 9. Name the bile salts and bile pigments
Sayyanarayana (5th Edn): 174, 214 | Harper (31st Edn): 521, 305 | DM Vaidyanathan (9th Edn): 231
 10. Name four functions of vitamin C
Sayyanarayana (5th Edn): 135 | Harper (31st Edn): 539 | DM Vaidyanathan (9th Edn): 519, 520, 521
 11. Steatorrhea
Sayyanarayana (5th Edn): 117 | DM Vaidyanathan (9th Edn): 765
 12. Specific dynamic action
Sayyanarayana (5th Edn): 505 | Harper (31st Edn): 156, 520, 145 | DM Vaidyanathan (9th Edn): 551
- WRITE BRIEFLY ON**
1. Describe in detailed the metabolism of phenylalanine and add a note on phenylketonuria.
Sayyanarayana (5th Edn): 345 | Harper (31st Edn): 288 | DM Vaidyanathan (9th Edn): 316-320, 322
 2. Give an account of daily requirement, absorption, transport, biochemical functions and clinical abnormalities of iron.
Sayyanarayana (5th Edn): 415 | Harper (31st Edn): 523, 524, 527, 528, 529 | DM Vaidyanathan (9th Edn): 356-357
- [5 x 2 = 10]**
- WRITE SHORT NOTE ON**
3. Types of RNA and explain functions of each
Sayyanarayana (5th Edn): 51 | Harper (31st Edn): 336 | DM Vaidyanathan (9th Edn): 508-513
 4. Quaternary Structure of protein
Sayyanarayana (5th Edn): 55, 51 | Harper (31st Edn): 34 | DM Vaidyanathan (9th Edn): 235
 5. Metabolism of Glycine
Sayyanarayana (5th Edn): 242 | Harper (31st Edn): 312-317 | DM Vaidyanathan (9th Edn): 222, 223
 6. Fluid mosaic model of membrane structure
Sayyanarayana (5th Edn): 523 | DM Vaidyanathan (9th Edn): 15
 7. Recombinant DNA and its applications.
Sayyanarayana (5th Edn): 578 | Harper (31st Edn): 439 | DM Vaidyanathan (9th Edn): 505-507
- [5 x 2 = 10]**
- WRITE BRIEFLY ON**
8. Bence Jones Protein
Sayyanarayana (5th Edn): 125
 9. Differences between Nucleotide and Nucleoside
Sayyanarayana (5th Edn): 72, 73 | Harper (31st Edn): 322, 329, 349
 10. Zymogens
Sayyanarayana (5th Edn): 562 | Harper (31st Edn): 37, 527 | DM Vaidyanathan (9th Edn): 393
 11. Vandenberg reaction
Sayyanarayana (5th Edn): 111 | DM Vaidyanathan (9th Edn): 467 | DM Vaidyanathan (9th Edn): 231
 12. Active Transport
Sayyanarayana (5th Edn): 627 | Harper (31st Edn): 467 | DM Vaidyanathan (9th Edn): 21

M.B.B.S DEGREE EXAMINATION
 August - 2017
First M.B.B.S Examination
BIOCHEMISTRY
PAPER - I

N T R U H S

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Describe the tricarboxylic acid cycle and explain its significance. Add a note on the energetics. **[5+5=10]**
Satyaratayana (3rd Edn): 254, 256 | Harper (31st Edn): 130 | DM Vasudevan (9th Edn): 334.
2. Describe the sources, dietary requirements, biochemical functions and deficiency manifestations of Vitamin A. **[1+2+5+2=10]**
Satyaratayana (3rd Edn): 119 | Harper (31st Edn): 529-530 | DM Vasudevan (9th Edn): 488, 492

WRITE BRIEFLY ON

3. Iso enzymes and their clinical importance
Satyaratayana (3rd Edn): 112 | Harper (31st Edn): 61-62 | DM Vasudevan (9th Edn): 72
4. Porphyrias
Satyaratayana (3rd Edn): 210 | Harper (31st Edn): 305-310 | DM Vasudevan (9th Edn): 363
5. Dietary fibre
Satyaratayana (3rd Edn): 508 | DM Vasudevan (9th Edn): 552
6. High energy compounds
Satyaratayana (3rd Edn): 220 | DM Vasudevan (9th Edn): 345
7. Detoxification by conjugation
Satyaratayana (3rd Edn): 614 | Harper (31st Edn): 5558 | DM Vasudevan (9th Edn): 480
8. Essential fatty acids
Satyaratayana (3rd Edn): 509 | Harper (31st Edn): 196, 216 | DM Vasudevan (9th Edn): 255
9. Causes of fatty liver
Satyaratayana (3rd Edn): 322 | Harper (31st Edn): 243 | DM Vasudevan (9th Edn): 211, 212
10. Coenzyme form of Niacin, write one reaction.
Satyaratayana (3rd Edn): 142 | Harper (31st Edn): 328 | DM Vasudevan (9th Edn): 502, 503
11. Lactose intolerance.
Satyaratayana (3rd Edn): 294 | Harper (31st Edn): 215, 290, 207, 210 | DM Vasudevan (9th Edn): 213
12. What are Ketone bodies and write about Ketonuria.
Satyaratayana (3rd Edn): 420 | DM Vasudevan (9th Edn): 542, 543

Max. Marks: 50

1. Enumerate the liver function tests and kidney function tests. Write in detail about one kidney function test and one liver function test.
[4 + 3 + 3 = 10]
2. Write in detail about urea cycle and add a note on urea cycle disorders.
[6 + 4 = 10]

WRITE SHORT NOTE ON

3. Polymerase chain reaction (PCR)
Satyaratayana (3rd Edn): 534 | Harper (31st Edn): 439, 440 | DM Vasudevan (9th Edn): 658
4. Gout
Satyaratayana (3rd Edn): 395 | Harper (31st Edn): 190, 224, 334 | DM Vasudevan (9th Edn): 583
5. Metabolic acidosis
Satyaratayana (3rd Edn): 48 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 446
6. Differences between DNA and RNA
Satyaratayana (3rd Edn): 73 | Harper (31st Edn): 370, 362
7. Calcitriol
Satyaratayana (3rd Edn): 409 | Harper (31st Edn): 530-531

WRITE BRIEFLY ON

8. Wilson's disease
Satyaratayana (3rd Edn): 417 | Harper (31st Edn): 627 | DM Vasudevan (9th Edn): 430, 541
9. Orotic aciduria
Satyaratayana (3rd Edn): 400 | Harper (31st Edn): 336 | DM Vasudevan (9th Edn): 587
10. Four factors effecting absorption of iron.
Satyaratayana (3rd Edn): 416 | Harper (31st Edn): 523, 524 | DM Vasudevan (9th Edn): 537
11. Anion gap
Satyaratayana (3rd Edn): 480 | DM Vasudevan (9th Edn): 176, 446
12. Flourosis.
Satyaratayana (3rd Edn): 420 | DM Vasudevan (9th Edn): 542, 543

M.B.B.S DEGREE EXAMINATION

December - 2016

First M.B.B.S Examination BIOCHEMISTRY PAPER - I

Time: 2½ Hours

1. Write in detail about the metabolism of chylomicrons giving suitable examples. [10]

Sanyanarayana (5th Edn): 177, 319 | Harper (31st Edn): 240-241

2. Write in detail about the steps of glycolysis in anaerobic condition. Add a note on its regulation and energetics. [10]

Sanyanarayana (5th Edn): 244, 383 | Harper (31st Edn): 157-163

WRITE SHORT NOTES ON

3. Functions of biotin [5 × 4 = 20]

Sanyanarayana (5th Edn): 150 | Harper (31st Edn): 528, 538 | DM Vasudevan (9th Edn): 511

4. Homopolysaccharides [5 × 4 = 20]

Sanyanarayana (5th Edn): 10, 21 | Harper (31st Edn): 156-159 | DM Vasudevan (9th Edn): 93, 94

5. Define Basal Metabolic Rate (BMR) and write the factors affecting BMR [5 × 4 = 20]

Sanyanarayana (5th Edn): 502 | Harper (31st Edn): 524 | DM Vasudevan (9th Edn): 550

6. Protein energy malnutrition [5 × 4 = 20]

Sanyanarayana (5th Edn): 515 | DM Vasudevan (9th Edn): 555

7. Isoenzymes [5 × 2 = 10]

Sanyanarayana (5th Edn): 112, 114 | Harper (31st Edn): 61-62 | DM Vasudevan (9th Edn): 72

WRITE BRIEFLY ON

8. Significance of uronic acid pathway [5 × 2 = 10]

Sanyanarayana (5th Edn): 273 | Harper (31st Edn): 182, 189

9. Acute intermittent porphyria-mention the deficient enzyme and the lab findings [5 × 2 = 10]

Sanyanarayana (5th Edn): 210 | Harper (31st Edn): 310 | DM Vasudevan (9th Edn): 364

10. Effect of temperature on enzyme activity [5 × 2 = 10]

Sanyanarayana (5th Edn): 91 | Harper (31st Edn): 75 | DM Vasudevan (9th Edn): 65

11. Mention different types of α-Thalassemias [5 × 2 = 10]

Sanyanarayana (5th Edn): 205 | Harper (31st Edn): 54, 650 | DM Vasudevan (9th Edn): 381

12. Mention functions of Haemoglobin [5 × 2 = 10]

Sanyanarayana (5th Edn): 197, 206 | Harper (31st Edn): 53

N T R U H S

M.B.B.S DEGREE EXAMINATION

December - 2016

First M.B.B.S Examination BIOCHEMISTRY PAPER - II

Max. Marks: 50

1. Write about transamination deamination and transmethylation [4 + 3 + 3 = 10]

Sanyanarayana (5th Edn): 333, 361, 334 | Harper (31st Edn): 131 | DM Vasudevan (9th Edn): 270, 271

2. Discussion the role of buffers and kidney in pH homeostasis [3 + 7 = 10]

Sanyanarayana (5th Edn): 476, 678

WRITE SHORT NOTES ON

3. [5 × 4 = 20]

Sanyanarayana (5th Edn): 269 | Harper (31st Edn): 33-4

- (a) Hyperuricemia [5 × 2 = 10]

Sanyanarayana (5th Edn): 534 | Harper (31st Edn): 57-58 | DM Vasudevan (9th Edn): 630

- (b) Mutations [5 × 2 = 10]

Sanyanarayana (5th Edn): 623 | Harper (31st Edn): 459 | DM Vasudevan (9th Edn): 634

- (c) Structure of plasma membrane [5 × 2 = 10]

Sanyanarayana (5th Edn): 623 | Harper (31st Edn): 459 | DM Vasudevan (9th Edn): 634

- (d) Recombinant DNA [5 × 2 = 10]

Sanyanarayana (5th Edn): 623 | Harper (31st Edn): 459 | DM Vasudevan (9th Edn): 634

- (e) Iron absorption [5 × 2 = 10]

Sanyanarayana (5th Edn): 136, 416 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 536

WRITE BRIEFLY ON

- (a) Isoelectric Ph [5 × 2 = 10]

Sanyanarayana (5th Edn): 52, 64 | Harper (31st Edn): 42

- (b) Functions of Calcium [5 × 2 = 10]

Sanyanarayana (5th Edn): 128 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 527-534

- (c) Termination of Transcription [5 × 2 = 10]

Sanyanarayana (5th Edn): 341 | Harper (31st Edn): 383

- (d) Alkaptonuria [5 × 2 = 10]

Sanyanarayana (5th Edn): 337, 373 | Harper (31st Edn): 527

- (e) Mention functions of immunoglobulins [5 × 2 = 10]

Sanyanarayana (5th Edn): 333, 373 | Harper (31st Edn): 527

M.B.B.S DEGREE EXAMINATION

August - 2016

First M.B.B.S Examination BIOCHEMISTRY PAPER - I

Time: 2½ Hours

N T R U H S

Note : Answer all questions : Illustrate your answer with suitable diagrams.

Max. Marks: 50

1. Write the classification of enzymes giving examples. Give an account on enzyme inhibition? [5+5=10]

Satyavatayana (5th Edn): 87-92 | Harper (31st Edn): 63-65 | DM Vasudevan (9th Edn): 53, 54

2. Write the definition, substrates, pathway including enzymes and regulation of gluconeogenesis? [1+2+5+2=10]

Satyavatayana (5th Edn): 258 | Harper (31st Edn): 130, 133, 161 | DM Vasudevan (9th Edn): 139

[5 × 4 = 20]

WRITE SHORT NOTE ON

3. Chemosmotic hypothesis.

Satyavatayana (5th Edn): 228 | Harper (31st Edn): 121 | DM Vasudevan (9th Edn): 350-351

4. Phase I of detoxification.

Satyavatayana (5th Edn): 276, 344, 415, 613 | Harper (31st Edn): 115, 116 | DM Vasudevan (9th Edn): 479

5. Bile acids

Satyavatayana (5th Edn): 174, 315 | Harper (31st Edn): 202, 249 | DM Vasudevan (9th Edn): 367

6. Sickle cell anemia

Satyavatayana (5th Edn): 201, 608 | Harper (31st Edn): 650 | DM Vasudevan (9th Edn): 379

7. Dietary fibre - beneficials and adverse effects.

Satyavatayana (5th Edn): 170, 318, 507 | Harper (31st Edn): 526 | DM Vasudevan (9th Edn): 552

WRITE BRIEFLY ON

8. Functions of vitamin K

Satyavatayana (5th Edn): 132 | Harper (31st Edn): 532-533 | DM Vasudevan (9th Edn): 498

9. Steatorrhea

Satyavatayana (5th Edn): 177 | DM Vasudevan (9th Edn): 765

10. Von-Gierkes disease

Satyavatayana (5th Edn): 269 | Harper (31st Edn): 335 | DM Vasudevan (9th Edn): 147

11. Deficiency manifestation of folic acid

Satyavatayana (5th Edn): 153 | Harper (31st Edn): 282 | DM Vasudevan (9th Edn): 512

12. Lipoprotein structure.

Satyavatayana (5th Edn): 319 | Harper (31st Edn): 237-238 | DM Vasudevan (9th Edn): 224

[5 × 2 = 10]

WRITE BRIEFLY ON

8. Functions of thyroxine

Satyavatayana (5th Edn): 349, 420, 440, 503 | Harper (31st Edn): 498, 497 | DM Vasudevan (9th Edn): 630

9. What are tumor markers? Give two examples.

Satyavatayana (5th Edn): 136, 416 | Harper (31st Edn): 101, 523, 54 | DM Vasudevan (9th Edn): 537

Biochemical functions of zinc and iodine.

Satyavatayana (5th Edn): 302, 618 | Harper (31st Edn): 224, 197

Mutations

Satyavatayana (5th Edn): 534 | Harper (31st Edn): 350-351 | DM Vasudevan (9th Edn): 630

Regulation of iron absorption

Satyavatayana (5th Edn): 136, 416 | Harper (31st Edn): 101, 523, 54 | DM Vasudevan (9th Edn): 537

Biochemical functions of zinc and iodine.

Satyavatayana (5th Edn): 420, 440, 421 | Harper (31st Edn): 562 | DM Vasudevan (9th Edn): 542

Mutations

Satyavatayana (5th Edn): 534 | Harper (31st Edn): 350-351 | DM Vasudevan (9th Edn): 630

Regulation of iron absorption

Satyavatayana (5th Edn): 136, 416 | Harper (31st Edn): 101, 523, 54 | DM Vasudevan (9th Edn): 537

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Satyavatayana (5th Edn): 420, 440, 421 | Harper (31st Edn): 562 | DM Vasudevan (9th Edn): 542

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Satyavatayana (5th Edn): 420, 440, 421 | Harper (31st Edn): 562 | DM Vasudevan (9th Edn): 542

Mutations

M.B.B.S DEGREE EXAMINATION

December - 2015

First M.B.B.S Examination BIOCHEMISTRY PAPER . I

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

- Describe the sources, dietary requirements, biochemical functions and deficiency manifestations of vitamin A. [4 + 4 + 2 = 10]
Sayyanarayana (5th Edn): 122 | Harper (31st Edn): 528, 529 | DM Vasudevan (9th Edn): 488-492
- Describe the pathway of ketone bodies synthesis and utilization. Add a note on ketoacidosis. [6 + 4 = 10]
Sayyanarayana (5th Edn): 297, 481, 554 | Harper (31st Edn): 207, 210 | DM Vasudevan (9th Edn): 213, 215

WRITE BRIEFLY ON

- Lactose intolerance.

Sayyanarayana (5th Edn): 177 | Harper (31st Edn): 519-520 | DM Vasudevan (9th Edn): 128

- Isoenzymes.

Sayyanarayana (5th Edn): 112, 114 | Harper (31st Edn): 66 | DM Vasudevan (9th Edn): 72

- Significance of Hexose Monophosphate Pathway (HMP shunt).

Sayyanarayana (5th Edn): 269, 363 | Harper (31st Edn): 182-190 | DM Vasudevan (9th Edn): 147

- Jaundice.

Sayyanarayana (5th Edn): 215, 456 | Harper (31st Edn): 305 | DM Vasudevan (9th Edn): 370-397

- Inhibitors of respiratory chain.

Sayyanarayana (5th Edn): 230 | Harper (31st Edn): 118 | DM Vasudevan (9th Edn): 332-334

WRITE BRIEFLY ON

- Functions of essential fatty acids.

Sayyanarayana (5th Edn): 32, 508 | Harper (31st Edn): 208 | DM Vasudevan (9th Edn): 255

- Polysaccharides

Sayyanarayana (5th Edn): 10, 20 | Harper (31st Edn): 142 | DM Vasudevan (9th Edn): 93

- Methemoglobin.

Sayyanarayana (5th Edn): 20, 275 | Harper (31st Edn): 53-54, 649 | DM Vasudevan (9th Edn): 377

- Causes and clinical symptoms of kwashiorkor.

Sayyanarayana (5th Edn): 183, 515 | Harper (31st Edn): 263-264, 524-525 | DM Vasudevan (9th Edn): 556

- Cot cycle.

Sayyanarayana (5th Edn): 261 | Harper (31st Edn): 177, 178 | DM Vasudevan (9th Edn): 137

- Max. Marks: 50

Note : Answer all questions : Illustrate your answer with suitable diagrams.

- Describe in detail the biochemical functions of calcium in human body. [5 + 5 = 10]

Sayyanarayana (5th Edn): 527-534 | DM Vasudevan (9th Edn): 527-534

- Describe the synthesis of DNA in detail with suitable diagram. [10]

Sayyanarayana (5th Edn): 525-583 | Harper (31st Edn): 341-342

[5 × 4 = 20]

WRITE SHORT NOTE ON

- tRNA structure and function.

Sayyanarayana (5th Edn): 83, 550 | Harper (31st Edn): 343, 374 | DM Vasudevan (9th Edn): 613, 614

- Structure and classes of Immunoglobulins.

Sayyanarayana (5th Edn): 187, 575 | Harper (31st Edn): 639, 627, 643 | DM Vasudevan (9th Edn): 693, 694

- Outline the steps of synthesis of urea.

Sayyanarayana (5th Edn): 338, 341 | Harper (31st Edn): 272 | DM Vasudevan (9th Edn): 272-273

- Blood buffers

Sayyanarayana (5th Edn): 476

- Renal clearance tests.

Sayyanarayana (5th Edn): 462 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 414

[5 × 2 = 10]

WRITE BRIEFLY ON

- Essential amino acids.

Sayyanarayana (5th Edn): 509 | Harper (31st Edn): 264 | DM Vasudevan (9th Edn): 553

- What are oncogenes and give two examples.

Sayyanarayana (5th Edn): 659 | Harper (31st Edn): 685-688 | DM Vasudevan (9th Edn): 711

- Write four causes for metabolic acidosis.

Sayyanarayana (5th Edn): 483 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 446

- Maple syrup urine disease.

Sayyanarayana (5th Edn): 367 | Harper (31st Edn): 290, 293 | DM Vasudevan (9th Edn): 320

- Mechanisms of transport across biological membranes.

Sayyanarayana (5th Edn): 624 | Harper (31st Edn): 467-472

M.B.B.S DEGREE EXAMINATION

August - 2015

**First M.B.B.S Examination
BIOCHEMISTRY
PAPER - I****N T R U H S****M.B.B.S DEGREE EXAMINATION**

August - 2015

**First M.B.B.S Examination
BIOCHEMISTRY
PAPER - II****Time: 2½ Hours****Note : Answer all questions : Illustrate your answer with suitable diagrams.**

1. Write the glycolysis pathway in red blood cells. Add a note on 2, 3 Bis phosphoglycerate formation and its importance. [5 + 4 = 10]

Satyaparayana (5th Edn): 157, 158 | DM Vasudevan (9th Edn): 139

2. Give an account of sources, chemistry, biochemical functions, deficiency diseases and daily requirement of vitamin D. [2 + 2 + 2 + 2 = 10]

Satyaparayana (5th Edn): 528 | DM Vasudevan (9th Edn): 492-496

WRITE SHORT NOTE ON

3. Structure and classification of lipoproteins.

Satyaparayana (5th Edn): 319 | Harper (31st Edn): 237, 238 | DM Vasudevan (9th Edn): 224

4. Factors affecting enzyme activity.

Satyaparayana (5th Edn): 91-93 | Harper (31st Edn): 75 | DM Vasudevan (9th Edn): 62-70

5. Fatty liver.

Satyaparayana (5th Edn): 324 | Harper (31st Edn): 260, 261 | DM Vasudevan (9th Edn): 211, 212

6. Functions and deficiency manifestations of Thiamine.

Satyaparayana (5th Edn): 138 | Harper (31st Edn): 528, 533 | DM Vasudevan (9th Edn): 502, 503

7. Absorption of Monosaccharides.

Satyaparayana (5th Edn): 10, 15, 18 | Harper (31st Edn): 141-142 | DM Vasudevan (9th Edn): 128, 129, 130

WRITE BRIEFLY ON

8. List the primary and secondary bile acids.

Satyaparayana (5th Edn): 174, 315 | Harper (31st Edn): 255-256 | DM Vasudevan (9th Edn): 231

9. Calorific value.

Satyaparayana (5th Edn): 501 | DM Vasudevan (9th Edn): 549

10. Write any four heteropolysaccharides.

Satyaparayana (5th Edn): 10, 21, 23 | Harper (31st Edn): 145-147 | DM Vasudevan (9th Edn): 93

11. Steatorrhœa.

Satyaparayana (5th Edn): 177 | Harper (31st Edn): 496 | DM Vasudevan (9th Edn): 765

12. Define xenobiotics and give two examples.

Satyaparayana (5th Edn): 613 | Harper (31st Edn): 556 | DM Vasudevan (9th Edn): 478

Max. Marks: 50

1. Write in detail about urea cycle. Add a note on urea cycle disorders.

Satyaparayana (5th Edn): 338 | Harper (31st Edn): 272 | DM Vasudevan (9th Edn): 272-275 [6 + 4 = 10]

2. Write in detail about renal function tests.

Satyaparayana (5th Edn): 460 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 410

[5 x 4 = 20]**WRITE SHORT NOTE ON**

3. Respiratory acidosis.

Satyaparayana (5th Edn): 483 | DM Vasudevan (9th Edn): 449

4. Lac operon.

Satyaparayana (5th Edn): 562 | Harper (31st Edn): 411-412, 414 | DM Vasudevan (9th Edn): 636

5. Primary and secondary structure of proteins.

Satyaparayana (5th Edn): 55, 61 | Harper (31st Edn): 20-21, 35-37 | DM Vasudevan (9th Edn): 35, 37

6. Alkaptonuria.

Satyaparayana (5th Edn): 353 | Harper (31st Edn): 286 | DM Vasudevan (9th Edn): 311

7. Functions of iodine and fluoride.

Satyaparayana (5th Edn): 420, 440, 423 | Harper (31st Edn): 492, 159 | DM Vasudevan (9th Edn): 542, 543

WRITE BRIEFLY ON

8. Post transcriptional modifications.

Satyaparayana (5th Edn): 544 | Harper (31st Edn): 15, 17 | DM Vasudevan (9th Edn): 611

9. Isoelectric p^H.

Satyaparayana (5th Edn): 52, 64, 69 | Harper (31st Edn): 19 | DM Vasudevan (9th Edn): 42

10. Active methionine.

Satyaparayana (5th Edn): 345, 361 | Harper (31st Edn): 298 | DM Vasudevan (9th Edn): 288

11. Most commonly used tumor markers.

Satyaparayana (5th Edn): 662 | Harper (31st Edn): 700-701 | DM Vasudevan (9th Edn): 715

12. Normal serum levels of sodium, potassium, chloride and bicarbonate.

DM Vasudevan (9th Edn): 461, 462, 478

M.B.B.S DEGREE EXAMINATION

November - 2014

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - I

Time: 2½ Hours

N T R U H S

Note : Answer all questions : Illustrate your answer with suitable diagrams.

Max. Marks: 50

1. Describe the process of β (beta) – oxidation of fatty acids. [7 + 3 = 10]

Add a note on the energetics of the pathway.

Sayana Rayana (5th Edn): 287, 38 | Harper (31st Edn): 131 | DM Vasudevan (9th Edn): 201, 202, 203

A 6 year boy was taken to the hospital by his mother with complaints of decreased vision in the night. The doctor suspected a possible vitamin A deficiency. Describe in detail the sources, RDA, function and deficiency manifestation of the deficient nutrient. What other clinical features, the doctor has to look for in this case and what advice should be given? [1+1+3+3+2=10]

Sayana Rayana (5th Edn): 119, 122 | Harper (31st Edn): 529-530 | DM Vasudevan (9th Edn): 488-492

WRITE SHORT NOTE ON

3. Describe briefly the hormonal regulation of blood glucose levels.

Sayana Rayana (5th Edn): 241, 640 | Harper (31st Edn): 178-180 | DM Vasudevan (9th Edn): 135

4. Draw a plot of competitive enzyme inhibition. Give 2 examples of competitive inhibitors.

Sayana Rayana (5th Edn): 95 | Harper (31st Edn): 76, 77 | DM Vasudevan (9th Edn): 65, 66

5. Briefly explain the following:

(i) Specific Dynamic Action (ii) Glycemic index

Sayana Rayana (5th Edn): 503, 506 | Harper (31st Edn): 145, 520 | DM Vasudevan (9th Edn): 551, 560

6. Describe the clinical significance of the following enzymes:

(i) LDH (ii) Alkaline phosphatase
(iii) Creatine Kinase (iv) Amylase (v) Alanine transaminase.

Sayana Rayana (5th Edn): 147, 456, 460, 112, 114, 110, 112 | Harper (31st Edn): 237, 605, 620, 272, 273 | DM Vasudevan (9th Edn): 73, 74, 239, 76, 74

7. Give an outline of the electron transport chain including ATP generating sites.

Sayana Rayana (5th Edn): 227 | Harper (31st Edn): 118, 120 | DM Vasudevan (9th Edn): 346-354

WRITE BRIEFLY ON

8. Absolute specificity enzymes.

Sayana Rayana (5th Edn): 98 | Harper (31st Edn): 58 | DM Vasudevan (9th Edn): 70

9. Altered CNS behavior in patients with advanced liver disease.

Sayana Rayana (5th Edn): 614 | Harper (31st Edn): 557 | DM Vasudevan (9th Edn): 567, 568

10. Mention functions of Hemoglobinopathies.

Sayana Rayana (5th Edn): 57, 694 | Harper (31st Edn): 631, 53-54 | DM Vasudevan (9th Edn): 378

11. Lactose intolerance.

Sayana Rayana (5th Edn): 171 | Harper (31st Edn): 519, 520 | DM Vasudevan (9th Edn): 128

12. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

13. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 406, 414 | DM Vasudevan (9th Edn): 557 | DM Vasudevan (9th Edn): 464

14. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

15. Write BRIEFLY ON

16. Azaserine is used as an anticancer agent.

Sayana Rayana (5th Edn): 328

17. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

18. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

19. Write BRIEFLY ON

20. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

21. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

22. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

23. Write BRIEFLY ON

24. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

25. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

26. Write BRIEFLY ON

27. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

28. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

29. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

30. Write BRIEFLY ON

31. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

32. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

33. Write BRIEFLY ON

34. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

35. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

36. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

37. Write BRIEFLY ON

38. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

39. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

40. Write BRIEFLY ON

41. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

42. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

43. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

44. Write BRIEFLY ON

45. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

46. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

47. Write BRIEFLY ON

48. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

49. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

50. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

51. Write BRIEFLY ON

52. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

53. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

54. Write BRIEFLY ON

55. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

56. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

57. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

58. Write BRIEFLY ON

59. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

60. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

61. Write BRIEFLY ON

62. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

63. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

64. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

65. Write BRIEFLY ON

66. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

67. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

68. Write BRIEFLY ON

69. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

70. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

71. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

72. Write BRIEFLY ON

73. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

74. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

75. Write BRIEFLY ON

76. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

77. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

78. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

79. Write BRIEFLY ON

80. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

81. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

82. Write BRIEFLY ON

83. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

84. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

85. Wilson's disease.

Sayana Rayana (5th Edn): 420 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

86. Write BRIEFLY ON

87. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

Sayana Rayana (5th Edn): 525-527, 540, 543 | Harper (31st Edn): 341, 342

88. Wilson's disease.

Sayana Rayana (5th Edn): 398, 609

89. Write BRIEFLY ON

90. Oxalates in diet inhibit absorption of iron and calcium.

Sayana Rayana (5th Edn): 557 | DM Vasudevan (9th Edn): 464

91. Serum alpha fetoprotein and carcinoembryonic antigen.

Sayana Rayana (5th Edn): 663 | Harper (31st Edn): 298, 627 | DM Vasudevan (9th Edn): 432, 437

92. Wilson's disease.
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M.B.B.S DEGREE EXAMINATION

July/August - 2014

**First M.B.B.S Examination
BIOCHEMISTRY
PAPER-I****Time: 2½ Hours****Note : Answer all questions : Illustrate your answer with suitable diagrams.**

- 1. What are the different types of lipoproteins? Discuss their role in cholesterol transport. [5 + 5 = 10]**

Sayyanarayana (5th Edn): 319, 320 | Harper (31st Edn): 258, 133, 628 | DM Vasudevan (9th Edn): 224

WRITE SHORT NOTE ON

2. Describe the tricarboxylic acid cycle and explain its significance. Add a note on the energetics. [3 + 3 + 4 = 10]

Sayyanarayana (5th Edn): 253, 383 | Harper (31st Edn): 150 | DM Vasudevan (9th Edn): 334

WRITE SHORT NOTE ON

[5 × 4 = 20]

3. Porphyrias.

Sayyanarayana (5th Edn): 210 | Harper (31st Edn): 305 | DM Vasudevan (9th Edn): 363

WRITE BRIEFLY ON

4. Competitive inhibition with examples.

Sayyanarayana (5th Edn): 94 | Harper (31st Edn): 76-78, 77 | DM Vasudevan (9th Edn): 65, 66

WRITE BRIEFLY ON

5. Calorific value.

Sayyanarayana (5th Edn): 501 | DM Vasudevan (9th Edn): 549

WRITE BRIEFLY ON

6. Detoxification by conjugation.

Sayyanarayana (5th Edn): 344 | Harper (31st Edn): 558 | DM Vasudevan (9th Edn): 480

WRITE BRIEFLY ON

7. Function of Vitamin C.

Sayyanarayana (5th Edn): 135, 276 | Harper (31st Edn): 539 | DM Vasudevan (9th Edn): 519, 520, 521

WRITE BRIEFLY ON

[5 × 2 = 10]

8. Essential fatty acids.

Sayyanarayana (5th Edn): 32, 508 | Harper (31st Edn): 196, 216 | DM Vasudevan (9th Edn): 255

WRITE BRIEFLY ON

9. Sickle cell anemia.

Sayyanarayana (5th Edn): 201, 508 | Harper (31st Edn): 650 | DM Vasudevan (9th Edn): 379

WRITE BRIEFLY ON

10. Dietary fibre and its role.

Sayyanarayana (5th Edn): 318, 507 | DM Vasudevan (9th Edn): 552

WRITE BRIEFLY ON

11. Allosteric enzymes.

Sayyanarayana (5th Edn): 103 | Harper (31st Edn): 85 | DM Vasudevan (9th Edn): 68

WRITE BRIEFLY ON

12. Define Epimers. Name two Epimers.

Sayyanarayana (5th Edn): 154 | Harper (31st Edn): 143

WRITE BRIEFLY ON

Max. Marks: 50

[3 + 3 + 4 = 10]

Describe the various biochemical liver function tests. Explain the biochemical findings in different types of jaundice. [5 + 5 = 10]

Sayyanarayana (5th Edn): 454 | Harper (31st Edn): 566, 315 | DM Vasudevan (9th Edn): 397

[5 × 4 = 20]

WRITE SHORT NOTE ON

Role of lungs in maintenance of body pH. [5 × 4 = 20]

Sayyanarayana (5th Edn): 476 | DM Vasudevan (9th Edn): 441

Creatinine clearance.

Sayyanarayana (5th Edn): 462 | Harper (31st Edn): 439-440 | DM Vasudevan (9th Edn): 415

Polymerase chain reaction. [5 × 2 = 10]

Sayyanarayana (5th Edn): 579 | Harper (31st Edn): 439-440 | DM Vasudevan (9th Edn): 658

Role of parathromone in calcium homeostasis. [5 × 2 = 10]

Sayyanarayana (5th Edn): 268, 406 | Harper (31st Edn): 532 | DM Vasudevan (9th Edn): 530, 531

Tumor markers. [5 × 2 = 10]

Sayyanarayana (5th Edn): 662 | Harper (31st Edn): 700-701 | DM Vasudevan (9th Edn): 715

WRITE BRIEFLY ON

Anion gap. [5 × 2 = 10]

Sayyanarayana (5th Edn): 482 | DM Vasudevan (9th Edn): 176, 446

Mention four biochemical functions of zinc. [5 × 2 = 10]

Sayyanarayana (5th Edn): 421 | Harper (31st Edn): 98 | DM Vasudevan (9th Edn): 542

Wobble hypothesis. [5 × 2 = 10]

Sayyanarayana (5th Edn): 548 | Harper (31st Edn): 396 | DM Vasudevan (9th Edn): 615

Oncogenes. [5 × 2 = 10]

Sayyanarayana (5th Edn): 659 | Harper (31st Edn): 685-688 | DM Vasudevan (9th Edn): 711

Maple syrup urine. [5 × 2 = 10]

Sayyanarayana (5th Edn): 367 | Harper (31st Edn): 286 | DM Vasudevan (9th Edn): 300

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M.B.B.S DEGREE EXAMINATION

November - 2013

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - I

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Explain the components of electron transport chain and the flow of electron through them. Add a note on inhibitors and uncouplers.

$$[3 + 3 + 2 + 2 = 10]$$

2. Define 'glycogenesis' and 'glycogenolysis'. Describe glycogenesis in detail. How is it regulated?

$$[2 + 5 + 3 = 10]$$

WRITE SHORT NOTE ON

3. Sickle cell haemoglobin.

Satyaranayana (5th Edn): 201 | Harper (31st Edn): 337 | DM Vasudevan (9th Edn): 379

4. Therapeutic enzymes.

Satyaranayana (5th Edn): 105 | Harper (31st Edn): 68 | DM Vasudevan (9th Edn): 76, 77

5. Functions of cholesterol.

Satyaranayana (5th Edn): 310 | Harper (31st Edn): 202 | DM Vasudevan (9th Edn): 221

6. Wald's visual cycle.

Satyaranayana (5th Edn): 124 | DM Vasudevan (9th Edn): 489

7. Biochemical functions of vitamin B₁₂.

Satyaranayana (5th Edn): 156, 293, 422 | Harper (31st Edn): 536, 528 | DM Vasudevan (9th Edn): 516

WRITE BRIEFLY ON

8. Metalloenzymes.

Satyaranayana (5th Edn): 93 | Harper (31st Edn): 58 | DM Vasudevan (9th Edn): 56

9. Acute intermittent porphyria.

Satyaranayana (5th Edn): 210 | Harper (31st Edn): 310, 311 | DM Vasudevan (9th Edn): 364

10. Pyruvate dehydrogenase complex.

Satyaranayana (5th Edn): 138, 252 | Harper (31st Edn): 161 | DM Vasudevan (9th Edn): 138

11. Liposomes.

Satyaranayana (5th Edn): 42 | Harper (31st Edn): 204 | DM Vasudevan (9th Edn): 105

12. Specific dynamic action.

Satyaranayana (5th Edn): 503 | Harper (31st Edn): 156 | DM Vasudevan (9th Edn): 542

Max. Marks: 50

1. Explain how recombinant DNA is formed. What are the application of recombinant DNA technology in medicine?

$$[5 + 5 = 10]$$

2. Describe the formation of uric acid. What is the normal serum uric acid level? Explain the disease associated with its accumulation. Write the ways for lowering serum uric acid level.

$$[4 + 1 + 3 + 2 = 10]$$

WRITE SHORT NOTE ON

3. Urea cycle.

Satyaranayana (5th Edn): 338 | Harper (31st Edn): 272 | DM Vasudevan (9th Edn): 272-275

4. Nucleosomes.

Satyaranayana (5th Edn): 81 | Harper (31st Edn): 351 | DM Vasudevan (9th Edn): 594, 595

5. Structure of collagen.

Satyaranayana (5th Edn): 62, 67, 136 | Harper (31st Edn): 406 | DM Vasudevan (9th Edn): 721

6. Fluid mosaic model.

Satyaranayana (5th Edn): 623 | Harper (31st Edn): 465 | DM Vasudevan (9th Edn): 15

7. Functions of albumin in the body.

Satyaranayana (5th Edn): 623, 634, 671-675, 668, 669 | Harper (31st Edn): 599 | DM Vasudevan (9th Edn): 427

WRITE BRIEFLY ON

8. Functions of Thyroid stimulating hormone.

Satyaranayana (5th Edn): 436, 441 | Harper (31st Edn): 567 | DM Vasudevan (9th Edn): 674, 675

9. Reverse transcriptase.

Satyaranayana (5th Edn): 546, 667 | Harper (31st Edn): 344, 360

10. Biochemical functions of zinc in the body.

Satyaranayana (5th Edn): 421 | Harper (31st Edn): 98, 99 | DM Vasudevan (9th Edn): 542

11. Oncogenes.

Satyaranayana (5th Edn): 659 | Harper (31st Edn): 688 | DM Vasudevan (9th Edn): 711

12. Biochemical function of estrogens.

Satyaranayana (5th Edn): 316, 443, 447 | Harper (31st Edn): 470 | DM Vasudevan (9th Edn): 680

Satyaranayana (5th Edn): 551

Max. Marks: 50

M.B.B.S DEGREE EXAMINATION

November - 2013

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

Max. Marks: 50

1. Explain the components of electron transport chain and the flow of electron through them. Add a note on inhibitors and uncouplers.

$$[3 + 3 + 2 + 2 = 10]$$

2. Define 'glycogenesis' and 'glycogenolysis'. Describe glycogenesis in detail. How is it regulated?

$$[2 + 5 + 3 = 10]$$

WRITE SHORT NOTE ON

3. Sickle cell haemoglobin.

Satyaranayana (5th Edn): 201 | Harper (31st Edn): 337 | DM Vasudevan (9th Edn): 379

4. Therapeutic enzymes.

Satyaranayana (5th Edn): 105 | Harper (31st Edn): 68 | DM Vasudevan (9th Edn): 76, 77

5. Functions of cholesterol.

Satyaranayana (5th Edn): 310 | Harper (31st Edn): 202 | DM Vasudevan (9th Edn): 221

6. Wald's visual cycle.

Satyaranayana (5th Edn): 124 | DM Vasudevan (9th Edn): 489

7. Biochemical functions of vitamin B₁₂.

Satyaranayana (5th Edn): 156, 293, 422 | Harper (31st Edn): 536, 528 | DM Vasudevan (9th Edn): 516

WRITE BRIEFLY ON

8. Metalloenzymes.

Satyaranayana (5th Edn): 93 | Harper (31st Edn): 58 | DM Vasudevan (9th Edn): 56

9. Acute intermittent porphyria.

Satyaranayana (5th Edn): 210 | Harper (31st Edn): 310, 311 | DM Vasudevan (9th Edn): 364

10. Pyruvate dehydrogenase complex.

Satyaranayana (5th Edn): 138, 252 | Harper (31st Edn): 161 | DM Vasudevan (9th Edn): 138

11. Liposomes.

Satyaranayana (5th Edn): 42 | Harper (31st Edn): 204 | DM Vasudevan (9th Edn): 105

12. Specific dynamic action.

Satyaranayana (5th Edn): 503 | Harper (31st Edn): 156 | DM Vasudevan (9th Edn): 542

Satyaranayana (5th Edn): 551

Max. Marks: 50

12. Specific dynamic action.
Sayanaarayana (3rd Edn): 503 | Harper (31st Edn): 156 | DM Vasudevan (9th Edn): 551

12. Biochemical function of estrogens.
Sayanaarayana (3rd Edn): 316, 443, 447 | Harper (31st Edn): 470 | DM Vasudevan (9th Edn): 680

M.B.B.S DEGREE EXAMINATION
N T R U H S
BIOCHEMISTRY
PAPER - I

July - 2013

First M.B.B.S Examination

M.B.B.S DEGREE EXAMINATION

July - 2013

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Explain the reactions of citric acid cycle emphasizing energy yield and amphibolic use of intermediates. Add a note on the energetics. [6 + 4 = 10]

Sayanaarayana (3rd Edn): 233, 283 | Harper (31st Edn): 130 | DM Vasudevan (9th Edn): 334

2. Describe the ketogenesis pathway and explain its significance. What are the tests done to detect the presence of ketone bodies in urine? [2 + 2 + 1 + 2 + 2 = 10]

Sayanaarayana (3rd Edn): 293, 654 | Harper (31st Edn): 133 | DM Vasudevan (9th Edn): 213, 215

WRITE SHORT NOTE ON

3. Both cellulose and starch are homopolysaccharides of glucose yet humans digest only starch. Explain why? [5 × 4 = 20]

Sayanaarayana (3rd Edn): 269 | Harper (31st Edn): 166, 167 | DM Vasudevan (9th Edn): 147

4. Serum lipoproteins. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 319 | Harper (31st Edn): 238 | DM Vasudevan (9th Edn): 224

5. Type I glycogen storage disease. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 220 | DM Vasudevan (9th Edn): 345

6. Sources and deficiency manifestations of Vit.A. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 138 | Harper (31st Edn): 534 | DM Vasudevan (9th Edn): 503

7. High energy compounds. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 220 | DM Vasudevan (9th Edn): 447 | Harper (31st Edn): 486 | DM Vasudevan (9th Edn): 620

WRITE BRIEFLY ON

8. Explain why Thiamine deficiency is one of the causes for lactic acidosis. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 91 | Harper (31st Edn): 75 | DM Vasudevan (9th Edn): 65

9. Effect of temperature on enzyme activity. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 91 | Harper (31st Edn): 75 | DM Vasudevan (9th Edn): 498

10. Proenzymes. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 122 | Harper (31st Edn): 530, 528 | DM Vasudevan (9th Edn): 456

11. Name different types of α-Thalassemias. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 105, 171 | Harper (31st Edn): 87, 88 | DM Vasudevan (9th Edn): 381

12. Name different types of β-Thalassemias. [5 × 2 = 10]

Sayanaarayana (3rd Edn): 205 | Harper (31st Edn): 54 | DM Vasudevan (9th Edn): 381

M.B.B.S DEGREE EXAMINATION

July - 2013

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

M.B.B.S DEGREE EXAMINATION

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M.B.B.S DEGREE EXAMINATION

July - 2013

First M.B.B.S Examination

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M.B.B.S DEGREE EXAMINATION

November - 2012

First M.B.B.S Examination BIOCHEMISTRY PAPER - I

Time: 2½ Hours

1. Describe the biochemical changes in carbohydrate and lipid metabolism in prolonged starvation.
Satyavratayana (5th Edn): 355 | Harper (31st Edn): 242 | DM Vasudevan (9th Edn): 124

2. Describe the formation, transport and metabolic rate of ammonia in the body. What is ammonia toxicity?
Satyavratayana (5th Edn): 336 | Harper (31st Edn): 272 | DM Vasudevan (9th Edn): 272-275

WRITE SHORT NOTE ON

- Isoenzymes and their clinical importance.
Satyavratayana (5th Edn): 112, 114 | Harper (31st Edn): 61-62 | DM Vasudevan (9th Edn): 72

- Folate trap (Methyl trap)
Satyavratayana (5th Edn): 160 | Harper (31st Edn): 538 | DM Vasudevan (9th Edn): 517

5. Define basal metabolic rate (BMR) and list the factors affecting BMR.
Satyavratayana (5th Edn): 502 | Harper (31st Edn): 524 | DM Vasudevan (9th Edn): 538

6. Advantages and disadvantages of intake of polyunsaturated fatty acids.
Satyavratayana (5th Edn): 32, 132, 317, 508 | Harper (31st Edn): 220 | DM Vasudevan (9th Edn): 254, 255

7. Structure and function of glutathione.
Satyavratayana (5th Edn): 173, 344 | Harper (31st Edn): 713, 721

8. Dietary fibre.
Satyavratayana (5th Edn): 169, 508 | DM Vasudevan (9th Edn): 552

9. Two main causes of Fatty liver.
Satyavratayana (5th Edn): 324 | Harper (31st Edn): 244 | DM Vasudevan (9th Edn): 211

10. Main sources of sucrose and lactose.
Satyavratayana (5th Edn): 191, 277, 562 | Harper (31st Edn): 145, 146 | DM Vasudevan (9th Edn): 92

11. Mention four Biochemical functions of vitamin K.
Satyavratayana (5th Edn): 133 | Harper (31st Edn): 532 | DM Vasudevan (9th Edn): 498

12. Any four functions of phospholipids.
Satyavratayana (5th Edn): 245, 250 | Harper (31st Edn): 234-235 | DM Vasudevan (9th Edn): 104, 105

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First M.B.B.S Examination BIOCHEMISTRY PAPER - II

Max. Marks: 50

1. Describe the process of DNA replication. Enumerate the DNA repair mechanisms.
Satyavratayana (5th Edn): 525-528 | Harper (31st Edn): 341 | DM Vasudevan (9th Edn): 608-613

2. Write the causes and biochemical findings in metabolic acidosis. Explain the compensatory mechanism.
Satyavratayana (5th Edn): 483 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 446, 447

WRITE SHORT NOTE ON

- Gout.

3. Gastric function tests.
Satyavratayana (5th Edn): 395, 398 | Harper (31st Edn): 190, 244 | DM Vasudevan (9th Edn): 583

4. Structure of plasma membrane.
Satyavratayana (5th Edn): 463 | DM Vasudevan (9th Edn): 404

5. Creatinine clearance test.
Satyavratayana (5th Edn): 623 | Harper (31st Edn): 459 | DM Vasudevan (9th Edn): 15

6. Biochemical functions of copper in the body.
Satyavratayana (5th Edn): 462 | Harper (31st Edn): 451 | DM Vasudevan (9th Edn): 415

7. Functions of t-RNA.
Satyavratayana (5th Edn): 440 | Harper (31st Edn): 498 | DM Vasudevan (9th Edn): 681

8. Name the four distinct phases of cell cycle.
Satyavratayana (5th Edn): 530 | Harper (31st Edn): 691 | DM Vasudevan (9th Edn): 613, 614

9. Genetic code.
Satyavratayana (5th Edn): 547 | Harper (31st Edn): 333 | DM Vasudevan (9th Edn): 615

10. Four factors affecting absorption of iron.
Satyavratayana (5th Edn): 138, 416 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 632, 633

11. Four factors affecting absorption of calcium.
Satyavratayana (5th Edn): 133 | Harper (31st Edn): 532 | DM Vasudevan (9th Edn): 498

12. Four factors affecting absorption of iron.
Satyavratayana (5th Edn): 138, 416 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 632, 633

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PAPER - I

Time: 2½ Hours

1. Explain the reactions of Glycogenesis and Glycogenolysis in liver. How are these pathways regulated? [4 + 3 + 3 = 10]

Sayyanarayana (5th Edn): 263, 265 | Harper (31st Edn): 164 | DM Vasudevan (9th Edn): 143, 144

2. Give an account of the sources, chemistry, biochemical functions, deficiency diseases and daily requirement of vitamin A. [1 + 2 + 3 + 3 + 1 = 10]

Sayyanarayana (5th Edn): 122 | Harper (31st Edn): 529-530 | DM Vasudevan (9th Edn): 448-492

WRITE BRIEF NOTE ON

3. Ketogenesis. [5 × 4 = 20]

Sayyanarayana (5th Edn): 295, 654 | Harper (31st Edn): 133 | DM Vasudevan (9th Edn): 213

4. Porphyrias. [5 × 4 = 20]

Sayyanarayana (5th Edn): 210 | Harper (31st Edn): 305, 310 | DM Vasudevan (9th Edn): 65, 66

5. Competitive inhibition. [5 × 2 = 10]

Sayyanarayana (5th Edn): 94 | Harper (31st Edn): 76-78 | DM Vasudevan (9th Edn): 555, 556

6. Kwashiorkor and marasmus. [5 × 2 = 10]

Sayyanarayana (5th Edn): 183, 515 | Harper (31st Edn): 263-264 | DM Vasudevan (9th Edn): 555, 556

7. Galactosemia. [5 × 2 = 10]

Sayyanarayana (5th Edn): 278 | Harper (31st Edn): 191 | DM Vasudevan (9th Edn): 188

WRITE BRIEFLY ON

8. Essential fatty acids. [5 × 2 = 10]

Sayyanarayana (5th Edn): 32, 508 | Harper (31st Edn): 196, 216 | DM Vasudevan (9th Edn): 255

9. What are Isomerases? Give two examples. [5 × 2 = 10]

Sayyanarayana (5th Edn): 89 | Harper (31st Edn): 41 | DM Vasudevan (9th Edn): 55

10. Sickle cell haemoglobin. [5 × 2 = 10]

Sayyanarayana (5th Edn): 201 | Harper (31st Edn): 397 | DM Vasudevan (9th Edn): 379

11. Enzyme defects in essential fructosuria and hereditary fructose intolerance. [5 × 2 = 10]

Sayyanarayana (5th Edn): 180 | Harper (31st Edn): 180 | DM Vasudevan (9th Edn): 188, 194, 328

12. Sources and functions of folic acid. [5 × 2 = 10]

Sayyanarayana (5th Edn): 513 | Harper (31st Edn): 528 | DM Vasudevan (9th Edn): 512, 514

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PAPER - II

Note : Answer all questions : Illustrate your answer with suitable diagrams.

Max. Marks: 50

1. Explain the pathway for the degradation of purine nucleotides and enumerate the associated metabolic disorders [6 + 4 = 10]

Sayyanarayana (5th Edn): 75 | Harper (31st Edn): 327 | DM Vasudevan (9th Edn): 582, 583

2. Give an account of transamination, deamination and transmethylation. [4 + 3 + 3 = 10]

Sayyanarayana (5th Edn): 146, 333, 361, 334 | Harper (31st Edn): 131 | DM Vasudevan (9th Edn): 270, 271

WRITE SHORT NOTE ON

3. Regulation of plasma calcium. [5 × 4 = 20]

Sayyanarayana (5th Edn): 128, 268, 406 | Harper (31st Edn): 478 | DM Vasudevan (9th Edn): 579

4. Metabolic and respiratory alkalosis.

Sayyanarayana (5th Edn): 483, 484 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 449, 449

5. Plasma proteins and their functions. [5 × 2 = 10]

Sayyanarayana (5th Edn): 182 | Harper (31st Edn): 133, 639 | DM Vasudevan (9th Edn): 425

6. Tumor markers.

Sayyanarayana (5th Edn): 662 | Harper (31st Edn): 700-701 | DM Vasudevan (9th Edn): 725

7. Secondary structure of proteins. [5 × 2 = 10]

Sayyanarayana (5th Edn): 55, 61 | Harper (31st Edn): 21 | DM Vasudevan (9th Edn): 37

WRITE BRIEFLY ON

8. Differences between amylose and amylopectin. [5 × 2 = 10]

Sayyanarayana (5th Edn): 42 | Harper (31st Edn): 145 | DM Vasudevan (9th Edn): 42

9. What are conjugated proteins? Give two examples. [5 × 2 = 10]

Sayyanarayana (5th Edn): 54 | Harper (31st Edn): 555 | DM Vasudevan (9th Edn): 44

10. Biochemical functions of sodium.

Sayyanarayana (5th Edn): 403 | Harper (31st Edn): 48, 55 | DM Vasudevan (9th Edn): 450, 451

11. Base pairing rule.

Sayyanarayana (5th Edn): 555 | Harper (31st Edn): 555 | DM Vasudevan (9th Edn): 555, 556

12. Alkaptonuria.

Sayyanarayana (5th Edn): 555 | Harper (31st Edn): 555 | DM Vasudevan (9th Edn): 555

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PAPER - I

Time: 2½ Hours

- Note : Answer all questions : Illustrate your answer with suitable diagrams.
- Explain the various factors affecting the enzyme activity. Add a note on the significance of the K_m value of the enzyme. [7 + 3 = 10]

Sathyarajana (3rd Edn): 90-93 | Harper (31st Edn): 72-73 | DM Vasudevan (9th Edn): 62-70

- Discuss the mitochondrial electron transport chain (E.T.C) and the inhibitors at various sites of this chain. [10]

Sathyarajana (3rd Edn): 224-235 | Harper (31st Edn): 118, 120 | DM Vasudevan (9th Edn): 343

WRITE SHORT NOTE ON

- Detoxification by conjugation. [5 × 4 = 20]

Sathyarajana (3rd Edn): 269 | Harper (31st Edn): 164 | DM Vasudevan (9th Edn): 147

WRITE BRIEFLY ON

- Glycogen storage diseases. [5 × 4 = 20]

Sathyarajana (3rd Edn): 224, 325 | Harper (31st Edn): 244 | DM Vasudevan (9th Edn): 211, 212

WRITE BRIEFLY ON

- Fatty liver and lipotropic factors. [5 × 4 = 20]

Sathyarajana (3rd Edn): 201 | Harper (31st Edn): 53-54, 65 | DM Vasudevan (9th Edn): 378

WRITE BRIEFLY ON

- Haemoglobinopathies with examples. [5 × 4 = 20]

Sathyarajana (3rd Edn): 324, 325 | Harper (31st Edn): 244 | DM Vasudevan (9th Edn): 21

WRITE BRIEFLY ON

- Functions and deficiency features of pyridoxine. [5 × 4 = 20]

Sathyarajana (3rd Edn): 146 | DM Vasudevan (9th Edn): 508

WRITE BRIEFLY ON

- Define isoenzymes. Give two examples and their diagnostic use. [5 × 2 = 10]

Sathyarajana (3rd Edn): 112, 114 | Harper (31st Edn): 61-62 | DM Vasudevan (9th Edn): 72

WRITE BRIEFLY ON

- Functions of Bile Salts. [5 × 2 = 10]

Sathyarajana (3rd Edn): 174, 315 | Harper (31st Edn): 202, 249 | DM Vasudevan (9th Edn): 232, 231

WRITE BRIEFLY ON

- Energetics of TCA (tricarboxylic acid) cycle. [5 × 2 = 10]

Sathyarajana (3rd Edn): 253, 383 | Harper (31st Edn): 153 | DM Vasudevan (9th Edn): 337

WRITE BRIEFLY ON

- Define antioxidants. Which vitamins have antioxidant function? [5 × 2 = 10]

Sathyarajana (3rd Edn): 275, 632 | Harper (31st Edn): 1126 | DM Vasudevan (9th Edn): 476

WRITE BRIEFLY ON

- Respiratory Quotient. [5 × 2 = 10]

Sathyarajana (3rd Edn): 501 | DM Vasudevan (9th Edn): 549

WRITE BRIEFLY ON

- Oncofetal antigens. [5 × 2 = 10]

Sathyarajana (3rd Edn): 108, 553 | Harper (31st Edn): 66-67, 343 | DM Vasudevan (9th Edn): 672

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Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

Max. Marks: 50

- Describe the steps of transcription in Eukaryotes. Give two examples for post transcriptional modifications. [8 + 2 = 10]

Sathyarajana (5th Edn): 543 | Harper (31st Edn): 341 | DM Vasudevan (9th Edn): 608-613

- Discuss the metabolism of calcium under the following sections:

- Sources
- Recommended daily allowance
- Functions (any 4)
- Regulation of plasma level
- Deficiency manifestations.

Sathyarajana (5th Edn): 406 | Harper (31st Edn): 506, 523, 93 | DM Vasudevan (9th Edn): 527-534

WRITE SHORT NOTE ON

- Plasma buffers and the role of buffers in the regulation of pH.

Sathyarajana (5th Edn): 476, 678 | Harper (31st Edn): 12-13 | DM Vasudevan (9th Edn): 441, 442

- Mechanisms of action of hormones.

Sathyarajana (5th Edn): 430 | Harper (31st Edn): 484 | DM Vasudevan (9th Edn): 667, 668

- Active transport with 2 examples.

Sathyarajana (5th Edn): 627 | Harper (31st Edn): 467 | DM Vasudevan (9th Edn): 21

- Biological important products derived from glycine.

Sathyarajana (5th Edn): 342 | Harper (32nd Edn): 298, 300-301 | DM Vasudevan (9th Edn): 283

- Enumerate the liver function tests. Explain the detoxification of bilirubin by the liver.

Sathyarajana (5th Edn): 454 | Harper (31st Edn): 566 | DM Vasudevan (9th Edn): 397

WRITE BRIEFLY ON

- Role of copper in iron metabolism.

Sathyarajana (5th Edn): 136, 416 | Harper (31st Edn): 98-100 | DM Vasudevan (9th Edn): 537

WRITE BRIEFLY ON

- Orotic aciduria.

Sathyarajana (5th Edn): 402 | Harper (31st Edn): 336

WRITE BRIEFLY ON

- Bonds responsible for maintaining the higher levels of organization of protein structure.

Sathyarajana (5th Edn): 402 | Harper (31st Edn): 333

WRITE BRIEFLY ON

- Ribozymes.

Sathyarajana (5th Edn): 663 | Harper (31st Edn): 33 | DM Vasudevan (9th Edn): 37

WRITE BRIEFLY ON

- Oncofetal antigens.

Sathyarajana (5th Edn): 663 | Harper (31st Edn): 33 | DM Vasudevan (9th Edn): 572

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PAPER - I

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Describe the CITRIC ACID cycle with energetics. Explain the Amphibolic role of this cycle? [6 + 2 + 2 = 10]

Sayarayana (3rd Edn): 253, 383 | Harper (31st Edn): 150-161 | DM Vandenber (3rd Edn): 324

2. Write the sources, daily requirement, functions and deficiency manifestations of vitamin C? [2 + 1 + 4 + 3 = 10]

Sayarayana (3rd Edn): 135, 276 | Harper (31st Edn): 43, 263, 539 | DM Vandenber (3rd Edn): 519-521

WRITE SHORT NOTE ON

3. Chemosmotic theory and oxidative phosphorylation.

Sayarayana (3rd Edn): 228, 226 | Harper (31st Edn): 121, 124 | DM Vandenber (3rd Edn): 350-351

WRITE BRIEFLY ON

4. Porphyrias.

Sayarayana (3rd Edn): 210 | Harper (31st Edn): 305, 310 | DM Vandenber (3rd Edn): 353

5. Digestion and absorption of lipids.

Sayarayana (3rd Edn): 173 | Harper (31st Edn): 521 | DM Vandenber (3rd Edn): 158, 199, 200

6. Competitive inhibition and its clinical significance.

Sayarayana (3rd Edn): 94 | Harper (31st Edn): 76-78 | DM Vandenber (3rd Edn): 65, 66

7. Enzyme markers in myocardial infarction.

Sayarayana (3rd Edn): 110 | Harper (31st Edn): 557 | DM Vandenber (3rd Edn): 240

WRITE BRIEFLY ON

8. Give two examples for phospholipids and write their functions.

Sayarayana (3rd Edn): 29, 35 | Harper (31st Edn): 194, 232 | DM Vandenber (3rd Edn): 404, 405

9. Specific Dynamic Action.

Sayarayana (3rd Edn): 503 | Harper (31st Edn): 156 | 551

MUTAROTATION

10. Sayarayana (3rd Edn): 15 | DM Vandenber (3rd Edn): 83

11. What are Antivitamins? Give any two examples with vitamin inhibited by them.

Sayarayana (3rd Edn): 95, 162 | DM Vandenber (3rd Edn): 569

12. Absolute specificity of Enzymes.

Sayarayana (3rd Edn): 98 | Harper (31st Edn): 33 | DM Vandenber (3rd Edn): 70

Max. Marks: 50

1. What is the normal pH of blood? Discuss the respiratory and renal regulation of pH. [1 + 4 + 5 = 10]

Sayarayana (3rd Edn): 515 | Harper (31st Edn): 12-13 | DM Vandenber (3rd Edn): 44, 45, 46

2. Explain the pathway of catabolism of Tyrosine. Write the important products synthesized from Tyrosine. Add a note on Abinism. [2 + 2 + 3 + 3 = 10]

Sayarayana (3rd Edn): 246, 334 | Harper (31st Edn): 256-253 | DM Vandenber (3rd Edn): 306-310, 311

WRITE SHORT NOTE ON

- Replication.

Sayarayana (3rd Edn): 225-228 | Harper (31st Edn): 347 | DM Vandenber (3rd Edn): 326-327

3. Fluid mosaic model of membrane structure.

Sayarayana (3rd Edn): 43 | Harper (31st Edn): 45 | DM Vandenber (3rd Edn): 35

4. What is Recombinant DNA? What is the role of restriction endonucleases in recombinant DNA technique? [C16]

Sayarayana (3rd Edn): 371 | Harper (31st Edn): 35-36 | DM Vandenber (3rd Edn): 62, 64, 65

5. Name the plasma proteins. List any four functions of them in the human body.

Sayarayana (3rd Edn): 127 | Harper (31st Edn): 33, 34 | DM Vandenber (3rd Edn): 25

WRITE BRIEFLY ON

6. Creatinine Clearance test.

Sayarayana (3rd Edn): 42 | Harper (31st Edn): 45 | DM Vandenber (3rd Edn): 45

7. Apoptosis.

Sayarayana (3rd Edn): 4 | 459 | Harper (31st Edn): 70 | DM Vandenber (3rd Edn): 74

8. Oxytocin.

Sayarayana (3rd Edn): 42 | DM Vandenber (3rd Edn): 543

FLUOROSIS.

Sayarayana (3rd Edn): 456 | DM Vandenber (3rd Edn): 288

9. Vandenber's test.

Sayarayana (3rd Edn): 459 | DM Vandenber (3rd Edn): 445

10. Anion gap.

Sayarayana (3rd Edn): 450 | DM Vandenber (3rd Edn): 77, 445

11. Mutarotation.

Sayarayana (3rd Edn): 25 | Harper (31st Edn): 83

12. Absolute specificity of Enzymes.

Sayarayana (3rd Edn): 98 | Harper (31st Edn): 33 | DM Vandenber (3rd Edn): 70

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Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Describe the sources, dietary requirements, biochemical functions and deficiency manifestations of vitamin A. [1 + 1 + 4 + 4 = 10]
Sayyanarayana (5th Edn): 528, 530 | DM Vasudevan (9th Edn): 488-492
2. Mention the pathways by which glucose is metabolized in the body.
 Describe the steps of anaerobic glycolysis and its energetics. [2 + 6 + 2 = 10]

Sayyanarayana (5th Edn): 244, 383 | Harper (31st Edn): 157 | DM Vasudevan (9th Edn): 128

WRITE BRIEFLY ON

3. Schematically represent the electron transport chain indicating the sites of ATP production and Inhibitors. [5 × 4 = 20]
4. Formation and fact of bile pigments. [5 × 4 = 20]

Sayyanarayana (5th Edn): 224-235 | Harper (31st Edn): 118, 120 | DM Vasudevan (9th Edn): 346-354

WRITE BRIEFLY ON

5. Factors affecting enzyme activity. [5 × 4 = 20]
6. Abnormal Haemoglobins. [5 × 4 = 20]

Sayyanarayana (5th Edn): 201 | Harper (31st Edn): 53, 54, 397 | DM Vasudevan (9th Edn): 378, 379

WRITE BRIEFLY ON

7. Lipoproteins. [5 × 2 = 10]
8. Biological value of proteins. [5 × 2 = 10]

Sayyanarayana (5th Edn): 319 | Harper (31st Edn): 258, 628, 34 | DM Vasudevan (9th Edn): 524

WRITE BRIEFLY ON

9. K_m value and its significance. [5 × 2 = 10]
10. Dietary fiber. [5 × 2 = 10]

Sayyanarayana (5th Edn): 511 | Harper (31st Edn): 519-520 | DM Vasudevan (9th Edn): 544

Detoxification by oxidation.

11. Lactose Intolerance. [5 × 2 = 10]
12. Mention of biochemical defects in:
 (a) Alkaptonuria
 (b) Maple syrup urine disease.

Sayyanarayana (5th Edn): 613, 614 | Harper (31st Edn): 556 | DM Vasudevan (9th Edn): 479

Sayyanarayana (5th Edn): 171 | Harper (31st Edn): 519-520 | DM Vasudevan (9th Edn): 128

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M.B.B.S DEGREE EXAMINATION

July - 2010

**First M.B.B.S Examination
BIOCHEMISTRY
PAPER - I****Time: 2½ Hours**

1. Explain the formation, utilization and excretion of ketone bodies. What is ketoacidosis? [4 + 2 + 2 + 2 = 10]

Sayyanarayana (5th Edn): 297, 48 | Harper (31st Edn): 207, 210 | DM Vasudevan (9th Edn): 213, 215

2. How is acetyl CoA oxidized in citric acid cycle? [3 + 7 = 10]

*Sayyanarayana (5th Edn): 253 | Harper (31st Edn): 161 | DM Vasudevan (9th Edn): 334***WRITE SHORT NOTE ON**

3. Isoenzymes.

Sayyanarayana (5th Edn): 112, 114 | Harper (31st Edn): 61-62 | DM Vasudevan (9th Edn): 72

4. Fatty liver.

Sayyanarayana (5th Edn): 324 | Harper (31st Edn): 243, 244 | DM Vasudevan (9th Edn): 211, 212

5. Inhibitors of respiratory chain.

Sayyanarayana (5th Edn): 232 | Harper (31st Edn): 118 | DM Vasudevan (9th Edn): 352, -354

6. Diagnostic importance of enzymes.

Sayyanarayana (5th Edn): 106 | Harper (31st Edn): 63-65 | DM Vasudevan (9th Edn): 76, 77

7. Biochemical functions of vitamin D.

*Sayyanarayana (5th Edn): 127 | Harper (31st Edn): 228 | DM Vasudevan (9th Edn): 492-496***WRITE BRIEFLY ON**

8. Cori cycle.

Sayyanarayana (5th Edn): 261 | Harper (31st Edn): 177 | DM Vasudevan (9th Edn): 137

9. Hyaluronic acid and its functions.

Sayyanarayana (5th Edn): 24 | Harper (31st Edn): 147, 509, 601 | DM Vasudevan (9th Edn): 95, 96

10. What is substrate level phosphorylation? Give two examples.

Sayyanarayana (5th Edn): 222 | Harper (31st Edn): 122 | DM Vasudevan (9th Edn): 342

11. Functions of cholesterol.

Sayyanarayana (5th Edn): 310 | Harper (31st Edn): 202 | DM Vasudevan (9th Edn): 221

12. What are lysases? Give two examples.

*Sayyanarayana (5th Edn): 89 | Harper (31st Edn): 57 | DM Vasudevan (9th Edn): 55***Note : Answer all questions : Illustrate your answer with suitable diagrams.****Max. Marks: 50**

1. How is glycine degraded in the body? Outline the synthesis of creatine from glycine. Enumerate the metabolic diseases of glycine. [4 + 3 + 3 = 10]

Sayyanarayana (5th Edn): 208 | Harper (31st Edn): 265, 298, 282-283 | DM Vasudevan (9th Edn): 283, 284, 285

- Explain transcription. Name the different types of RNA and indicate their functions. [6 + 2 + 2 = 10]

*Sayyanarayana (5th Edn): 539 | Harper (31st Edn): 341 | DM Vasudevan (9th Edn): 608-613***[5 x 4 = 20]****WRITE SHORT NOTE ON**

- Biochemical functions of zinc and iodine.

Sayyanarayana (5th Edn): 509 | Harper (31st Edn): 542, 540

- Nitrogen balance.

Sayyanarayana (5th Edn): 509 | Harper (31st Edn): 542, 540

- Blood buffers and regulation of pH.

Sayyanarayana (5th Edn): 473 | Harper (31st Edn): 12-13 | DM Vasudevan (9th Edn): 441, 442

- Biologically active peptides.

Sayyanarayana (5th Edn): 56, 68 | Harper (31st Edn): 21, 22

- Recombinant DNA and its applications.

*Sayyanarayana (5th Edn): 571 | Harper (31st Edn): 439 | DM Vasudevan (9th Edn): 643, 647***[5 x 2 = 10]****WRITE BRIEFLY ON**

- What is isoelectric pH of a protein? Mention two properties of a protein at this pH.

Sayyanarayana (5th Edn): 64, 69 | Harper (31st Edn): 19 | DM Vasudevan (9th Edn): 42

- What is creatine clearance? What is its diagnostic importance?

Sayyanarayana (5th Edn): 462 | Harper (31st Edn): 506 | DM Vasudevan (9th Edn): 415

- Name any two group I hormones. What is their mechanism of action?

Sayyanarayana (5th Edn): 429 | DM Vasudevan (9th Edn): 667

- Write the functions of immunoglobulin G.

Sayyanarayana (5th Edn): 187, 575 | Harper (31st Edn): 627 | DM Vasudevan (9th Edn): 694

- What are tumor markers? Give two examples.

*Sayyanarayana (5th Edn): 662 | Harper (31st Edn): 700-701 | DM Vasudevan (9th Edn): 715***M.B.B.S DEGREE EXAMINATION**

July - 2010

**First M.B.B.S Examination
BIOCHEMISTRY
PAPER - II****Max. Marks: 50**

1. Explain the formation, utilization and excretion of ketone bodies. What is ketoacidosis? [4 + 2 + 2 + 2 = 10]

Sayyanarayana (5th Edn): 297, 48 | Harper (31st Edn): 207, 210 | DM Vasudevan (9th Edn): 213, 215

2. How is acetyl CoA oxidized in citric acid cycle? [3 + 7 = 10]

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M.B.B.S DEGREE EXAMINATION

January - 2010

First M.B.B.S Examination BIOCHEMISTRY PAPER I

Time: 2½ Hours

N T R U H S

BIOCHEMISTRY

PAPER II

Max. Marks: 50

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Outline the reactions of hexose monophosphate shunt pathway. In which tissues this pathway is operative? What is the significance of this pathway? [6 + 2 + 2 = 10]

Sayyanarayana (3rd Edn): 346 | Harper (31st Edn): 130, 131 | DM Vasudevan (9th Edn): 147

2. How is NADH oxidized in the respiratory chain? Indicate the sites of oxidative phosphorylation. What is chemiosmotic theory? [4 + 3 + 3 = 10]

Sayyanarayana (3rd Edn): 226, 228, 229 | Harper (31st Edn): 118-121 | DM Vasudevan (9th Edn): 347, 348

WRITE BRIEFLY ON

3. Functions and deficiency of Niacin.

Sayyanarayana (3rd Edn): 142 | Harper (31st Edn): 534-535 | DM Vasudevan (9th Edn): 505, 507

4. Pyruvate dehydrogenase complex.

Sayyanarayana (3rd Edn): 462 | Harper (31st Edn): 161, 162 | DM Vasudevan (9th Edn): 138

5. Phospholipids and their functions.

Sayyanarayana (3rd Edn): 547 | Harper (31st Edn): 196 | DM Vasudevan (9th Edn): 104, 105

6. Glycogen storage diseases.

Sayyanarayana (3rd Edn): 269 | Harper (31st Edn): 164, 166 | DM Vasudevan (9th Edn): 147

7. Detoxification by conjugation.

Sayyanarayana (3rd Edn): 614 | Harper (31st Edn): 558 | DM Vasudevan (9th Edn): 480

WRITE BRIEFLY ON

8. Functions of high density lipoprotein.

Sayyanarayana (3rd Edn): 317 | Harper (31st Edn): 258-259 | DM Vasudevan (9th Edn): 230

9. Biochemically important compounds derived from cholesterol.

Sayyanarayana (3rd Edn): 315 | Harper (31st Edn): 502 | DM Vasudevan (9th Edn): 224

10. Proenzymes and their importance.

Sayyanarayana (3rd Edn): 102 | Harper (31st Edn): 87-88

11. What are ligases? Give two examples.

Sayyanarayana (3rd Edn): 87 | Harper (31st Edn): 57 | DM Vasudevan (9th Edn): 55

12. Functions of ascorbic acid.

Sayyanarayana (3rd Edn): 132 | Harper (31st Edn): 528, 539 | DM Vasudevan (9th Edn): 519, 520

M.B.B.S DEGREE EXAMINATION

January - 2010

First M.B.B.S Examination

BIOCHEMISTRY

PAPER - II

Max. Marks: 50

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. How is phenylalanine converted to tyrosine in the body? What is phenylketonuria? Outline the formation of thyroid hormones and catecholamines from tyrosine. [2 + 2 + 3 + 3 = 10]

Sayyanarayana (5th Edn): 269, 383 | Harper (31st Edn): 286 | DM Vasudevan (9th Edn): 306-310, 311

2. Give an account of Watson-Crick model of DNA. List the differences between DNA and RNA. How is DNA replicated? [3 + 3 + 2 + 2 = 10]

Sayyanarayana (5th Edn): 254, 291 | Harper (31st Edn): 339, 363 | DM Vasudevan (9th Edn): 593, 594, 607, 596-600

WRITE SHORT NOTE ON

3. Biochemical functions of copper.

Sayyanarayana (5th Edn): 142, 355 | Harper (31st Edn): 98-100 | DM Vasudevan (9th Edn): 541

Clearance Tests.

Sayyanarayana (5th Edn): 138, 460 | Harper (31st Edn): 455 | DM Vasudevan (9th Edn): 414

Characteristics of genetic code.

Sayyanarayana (5th Edn): 551 | Harper (31st Edn): 338 | DM Vasudevan (9th Edn): 615

Paper Electrophoresis.

Sayyanarayana (5th Edn): 725 | Harper (31st Edn): 628

Metabolic acidosis.

Sayyanarayana (5th Edn): 481 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 446

WRITE BRIEFLY ON

8. Definition and forces responsible for tertiary structure of a protein.

Sayyanarayana (5th Edn): 58 | Harper (31st Edn): 34-41 | DM Vasudevan (9th Edn): 37

9. Name four important substances derived from glycine.

Sayyanarayana (5th Edn): 342 | Harper (31st Edn): 298, 300-301 | DM Vasudevan (9th Edn): 283

10. Name any two gastrointestinal hormones. What is their mechanism of action? [5 × 2 = 10]

Sayyanarayana (5th Edn): 449 | Harper (31st Edn): 483, 484 | DM Vasudevan (9th Edn): 684, 685

Functions of plasma albumin

Sayyanarayana (5th Edn): 183 | Harper (31st Edn): 623, 624 | DM Vasudevan (9th Edn): 427

12. What do you mean by post translational modifications?

Sayyanarayana (5th Edn): 561 | DM Vasudevan (9th Edn): 511

M.B.B.S DEGREE EXAMINATION

July - 2009

First M.B.B.S Examination BIOCHEMISTRY PAPER-I

N T R U H S

M.B.B.S DEGREE EXAMINATION

July - 2009

First M.B.B.S Examination BIOCHEMISTRY PAPER-II

Time: 2½ Hours

Note : Answer all questions : Illustrate your answer with suitable diagrams.

1. Discuss the metabolism of ketone bodies and add a note on ketosis.
Write briefly on the test done for the detection of ketone bodies in urine.
Sahayarayana (5th Edn): 293, 386 | Harper (31st Edn): 207, 210 | DM Vasudevan (9th Edn): 213, 215
2. Write the steps of HMP SHUNT pathway. Write the significance of this pathway.
Sahayarayana (5th Edn): 269, 383 | Harper (31st Edn): 182, 191 | DM Vasudevan (9th Edn): 147

WRITE SHORT NOTE ON

Specificity of enzymes.

Sahayarayana (5th Edn): 58 | Harper (31st Edn): 58 | DM Vasudevan (9th Edn): 70

High energy compounds with example.

Sahayarayana (5th Edn): 220 | DM Vasudevan (9th Edn): 345

What are porphyrias? Write briefly on acute intermittent porphyria.

Sahayarayana (5th Edn): 210 | Harper (31st Edn): 305, 310 | DM Vasudevan (9th Edn): 363

Functions and deficiency manifestations of vitamin A.

Sahayarayana (5th Edn): 122 | Harper (31st Edn): 528, 530 | DM Vasudevan (9th Edn): 489, 491

Fatty acid synthase complex.

Sahayarayana (5th Edn): 299 | Harper (31st Edn): 224, 225 | DM Vasudevan (9th Edn): 206

WRITE BRIEFLY ON

Name the enzyme deficit in the following conditions

(a) Niemann Pick's Disease.

Sahayarayana (5th Edn): 278, 306 | Harper (31st Edn): 196, 257 | DM Vasudevan (9th Edn): 188, 259, 260

(b) Specific Dynamic Action.

Sahayarayana (5th Edn): 503 | Harper (31st Edn): 156 | DM Vasudevan (9th Edn): 551

(c) Anti Vitamins.

Sahayarayana (5th Edn): 95, 162 | DM Vasudevan (9th Edn): 569

(d) Structure of sucrose.

Sahayarayana (5th Edn): 19 | Harper (31st Edn): 145, 146 | DM Vasudevan (9th Edn): 92

Mechanisms of Detoxification.

Sahayarayana (5th Edn): 344, 455 | Harper (31st Edn): 115-116, 556-558 | DM Vasudevan (9th Edn): 479

Max. Marks: 50

1. How is ammonia detoxified in the body? Give an account of the urea cycle. Add a note on the enzyme defects in the cycle. [2 + 6 + 2 = 10]
Sahayarayana (5th Edn): 336 | Harper (31st Edn): 151-153, 276-278 | DM Vasudevan (9th Edn): 272-275
2. Explain the steps involved in the synthesis of recombinant DNA. Mention the clinical application of this technique.
Sahayarayana (5th Edn): 532 | Harper (31st Edn): 361-369 | DM Vasudevan (9th Edn): 642-647

WRITE SHORT NOTE ON

Metabolic acidosis.

Sahayarayana (5th Edn): 483 | Harper (31st Edn): 275 | DM Vasudevan (9th Edn): 445

Functions and deficiency manifestations of calcium.

Sahayarayana (5th Edn): 268, 128 | Harper (31st Edn): 523 | DM Vasudevan (9th Edn): 528, 530

Primary structure of proteins.

Sahayarayana (5th Edn): 55, 61 | Harper (31st Edn): 23-31 | DM Vasudevan (9th Edn): 55

Mechanism of action of steroid hormones.

Sahayarayana (5th Edn): 38, 315 | Harper (31st Edn): 202 | DM Vasudevan (9th Edn): 675, 677

Hepatic functional tests.

Sahayarayana (5th Edn): 454 | Harper (31st Edn): 555 | DM Vasudevan (9th Edn): 557

WRITE BRIEFLY ON

Wilson's Disease.

Sahayarayana (5th Edn): 420 | Harper (31st Edn): 288, 478 | DM Vasudevan (9th Edn): 620, 624

Write the normal serum levels of

- (a) Sodium
- (b) Potassium
- (c) Creatinine
- (d) Urea.

Sahayarayana (5th Edn): 411, 412, 344, 337 | DM Vasudevan (9th Edn): 402, 403, 418, 417

Hartnup's disease.

Sahayarayana (5th Edn): 361, 623 | Harper (31st Edn): 288, 555 | DM Vasudevan (9th Edn): 375

Anticancer agents.

Sahayarayana (5th Edn): 664 | Harper (31st Edn): 701-7023 | DM Vasudevan (9th Edn): 726

Write the general structure of immunoglobulins.

Sahayarayana (5th Edn): 487, 513 | Harper (31st Edn): 683-684 | DM Vasudevan (9th Edn): 685

Professors Choice Questions

Internal Assessment



PAPER - I

CARBOHYDRATES AND METABOLISM

LONG QUESTIONS

1. Describe the tricarboxylic acid cycle and explain its significance. Add a note on the energetics.
2. Define 'glycogenesis' and 'glycogenolysis'. Describe glycogenesis in detail. How is it regulated?
3. Outline the reactions of hexose monophosphate shunt pathway. In which tissues this pathway is operative? What is the significance of this pathway?
4. Discuss the Embden Meyer of pathway as it occurs in mature RBC. Add a note on its Energetics.
5. Describe the mechanism and factors that influence blood sugar level. Add a note on Hyperglycemia.

SHORT QUESTIONS

1. Galactosemia.
2. Glycogen storage diseases.
3. Von Gierke's Disease.
4. Mutarotation
5. Substrate-level phosphorylation

VERY SHORT QUESTIONS

1. Define Epimers. Name two Epimers.
2. Pyruvate dehydrogenase complex.
3. Cori cycle.

LIPIDS AND IT'S METABOLISM

LONG QUESTIONS

1. Describe the process of β (beta) – oxidation of fatty acids. Add a note on the energetics of the pathway.
2. Explain the formation, utilization and excretion of ketone bodies. What is ketoacidosis?
3. Describe the reaction of De novo synthesis of Fatty acids

SHORT QUESTIONS

1. Functions of cholesterol.
2. Ketogenesis.
3. Phospholipids and their functions.
4. Prostaglandins and their functions.
5. Essential fatty acids.

VERY SHORT QUESTIONS

1. Any four functions of phospholipids.
2. Essential fatty acids.
3. Functions of Bile Salts.

LONG QUESTIONS

1. Explain the various factors affecting the enzyme activity. Add a note on the significance of the K_m value of the enzyme.

SHORT QUESTIONS

1. Isoenzymes and their clinical importance.
2. Competitive Inhibition.
3. Factors affecting enzyme activity.
4. Isoenzymes.
5. Types of enzyme inhibition

VERY SHORT QUESTIONS

1. Absolute specificity enzymes.
2. Proenzymes.

VITAMINS

LONG QUESTIONS

1. A 6 year boy was taken to the hospital by his mother with complaints of decreased vision in the night. The doctor suspected a possible vitamin A deficiency. Describe in detail the sources, RDA, function and deficiency manifestation of the deficient nutrient. What other clinical features, the doctor has to look for in this case and what advice should be given?
2. Write the sources, daily requirement, functions and deficiency manifestations of vitamin C?
3. Write the sources of, daily allowance, chemistry, functions and deficiency diseases with relation to folic acid.
4. Write on chemistry, sources, biochemical functions, deficiency manifestations and daily requirements of Vitamin B₁.
5. Name the sulphur containing vitamins. Write sources, chemistry, biochemical functions required daily amount, deficiency manifestations of any one of them.

SHORT QUESTIONS

1. Function of Vitamin C.
2. Biochemical functions of vitamin D.
3. Functions and deficiency manifestations of vitamin A.
4. Scurvy
5. Biotin
6. Beri Beri

VERY SHORT QUESTIONS

1. Sources and deficiency manifestations of Vit.A.
2. What are Antivitamins? Give any two examples with vitamin inhibited by them.

HEMOGLOBIN AND PORPHYRIAS

SHORT QUESTIONS

1. Porphyrias.
2. Sickle cell haemoglobin.
3. Hemoglobinopathies with examples.
4. Abnormal Hemoglobins.
5. Abnormalities associated with bilirubin metabolism.

6. Thalassaemia.
7. Methemoglobin.
8. Glycosylated Hemoglobin.

VERY SHORT QUESTIONS

1. Name different types of α-Thalassemias.

DIGESTION AND ABSORPTION**SHORT QUESTIONS**

1. Proteolytic enzymes of Gastrointestinal tract secretions.

VERY SHORT QUESTIONS

1. Lactose intolerance.

BIOLOGICAL OXIDATION AND ETC**SHORT QUESTIONS**

1. Give an outline of the electron transport chain including ATP generating sites.
2. High energy compounds.
3. Inhibitors and Electron Transport Chain.
4. Metabolic acidosis.

VERY SHORT QUESTIONS

1. Uncouplers of oxidative phosphorylation.
2. Define a high energy compound. Give two examples of high energy compounds.

NUTRITION**SHORT QUESTIONS**

1. Calorific value.
2. Define basal metabolic rate (BMR) and list the factors affecting BMR.
3. Kwashiorkor and marasmus.
4. Specific Dynamic Action.
5. Biological value of proteins.

VERY SHORT QUESTIONS

1. Dietary fiber and its role.
2. Specific dynamic action.
3. Biological value of proteins.

DETOXIFICATION**SHORT QUESTIONS**

1. Detoxification by conjugation.

VERY SHORT QUESTIONS

1. Detoxification by hydrolysis (two examples).

PAPER - II

PROTEINS AND AMINO ACIDS AND ITS METABOLISM

LONG QUESTIONS

- LONG QUESTIONS**

 1. Discuss the metabolism of glycine under the following headings.
Headings :
 - (a) Synthesis
 - (b) Catabolism
 - (c) Specialized compounds synthesized
 2. Explain the pathway of catabolism of Tyrosine. Write the important products synthesized from Tyrosine. Add a note on Albinism.
 3. How is ammonia detoxified in the body? Give an account of the urea cycle. Add a note on the enzyme defects in the cycle.
 4. Define proteins. Explain structural organisation of proteins. Add a note on denaturation.
 5. Classify amino acids based on their metabolic rate. Give two examples for each class. Explain trans amination reactions with one example. Explain Decarboxylation of amino acids with two examples.

QUESTIONS WITH SHORT QUESTIONS

1. Urea cycle.
 2. Urea cycle and its disorders
 3. Alkaptonuria.
 4. Transamination
 5. Kwashiorkor

VERY SHORT QUESTIONS

- VERY SHORT QUESTIONS**

 1. What is isoelectric pH of a protein? Mention two properties of a protein at this pH.
 2. Name four important substances derived from glycine.
 3. Hartnup's disease.
 4. Essential amino acids.

PLASMA PROTEINS AND IMMUNOGLOBULINS

SHORT QUESTIONS

1. Plasma proteins and their functions.
 2. Types and functions of immunoglobulins.

VERY SHORT QUESTIONS

1. What are plasma proteins and write their normal ranges?

NUCLEOTIDES AND NUCIC ACID METABOLISM

LONG QUESTIONS

1. Describe the formation of uric acid. What is the normal serum uric acid level? Explain the disease associated with its accumulation. Write the ways for lowering serum uric acid level.
 2. Classify the nitrogenous bases present in the nucleic acids with suitable examples. Mention the source of each of the atoms present in the purine ring. Describe the catabolism of purine nucleotides. Write briefly on the associated metabolic disorders.

SHORT QUESTIONS

1. Gout.
 2. Name four different types of nucleotides and mention their biological importance

LONG QUESTIONS

MINERAL METABOLISM

SHORT QUESTIONS

1. Explain the absorption, transport and storage of dietary iron in the body.
2. Requirement, sources and biochemical functions of selenium.
3. Biochemical functions of copper in the body.
4. Regulation of serum calcium level.
5. Biological role of Fluorine in the body.
6. Write the importance of Iodine and copper in nutrition.
7. Name the trace elements. Write the important function for each one of them

VERY SHORT QUESTIONS

1. Wilson's disease.
2. Oxalates in diet inhibit absorption of iron and calcium.
3. Mention four biochemical functions of zinc.
4. Four factors affecting absorption of iron.
5. Biochemical function of selenium.

HORMONES AND DIABETES MELLITUS**SHORT QUESTIONS**

1. Mechanisms of action of hormones.
2. Mechanism of action of steroid hormones.
3. Biochemical actions of Insulin.
4. Describe the functions of adrenal cortical hormones.

VERY SHORT QUESTIONS

1. Biochemical function of oxytocin.
2. Composition and importance of Insulin.

ORGAN FUNCTION TESTS**LONG QUESTIONS**

1. Compare and contrast (1 similarity and 2 differences) prehepatic and post hepatic jaundice.

SHORT QUESTIONS

1. Creatinine clearance.
2. Enumerate the liver function tests. Explain the detoxification of bilirubin by the liver.
3. Renal Function Tests.
4. Clearance Tests.
5. Van Den Bergh's reaction.
6. Differential diagnosis of jaundice
7. How do you do Glucose Tolerance Test? Explain the different types of curves obtained?
8. Composition and properties of Bile

VERY SHORT QUESTIONS

1. What is creatinine clearance? What is its diagnostic importance?

LONG QUESTIONS

1. Explain how recombinant DNA is formed. What are the applications of recombinant DNA technology in medicine?
2. With the help of a diagram, describe the process of transcription. Add a note on post transcriptional modifications.
3. Describe the steps of eukaryotic replication of DNA. Add a note on Reverse transcription.

SHORT QUESTIONS

1. Describe PCR with diagram and list out two uses of it.
2. Compare and contrast (1 similarity and 2 differences) DNA polymerase and RNA polymerase.
3. What is Recombinant DNA? What is the role of restriction endonuclease in recombinant DNA technique?
4. Characteristics of genetic code.
5. Structure and function of tRNA.
6. Types of RNAs and their functions.

VERY SHORT QUESTIONS

1. Functions of t-RNA.
2. Genetic code.

WATER ELECTROLYTES AND ACID BASE BALANCE**LONG QUESTIONS**

1. Define a buffer. Explain the various mechanisms of regulation of acid-base balance. Add a note on acid-base disorders.

SHORT QUESTIONS

1. Metabolic acidosis.
2. Respiratory and metabolic acidosis.

VERY SHORT QUESTIONS

1. Anion gap.
2. Orotic aciduria.

BIOPHYSICAL CHEMISTRY**SHORT QUESTIONS**

1. Tumor markers.
2. Mutations.

VERY SHORT QUESTIONS

1. Serum alpha fetoprotein and carcinoembryonic antigen.
2. Oncogenes.
3. Apoptosis.
4. What are tumor markers? Give two examples.

BIOLOGICAL MEMBRANE AND TRANSPORT**SHORT QUESTIONS**

1. Fluid mosaic model.

VERY SHORT QUESTIONS

1. Active transport.