

TO FRAME THE SCHEME OF PRACTICAL / VIVA VOCE EXAMINATION FOR POST GRADUATE NON-CLINICAL DEGREE COURSES FROM KNOWLEDGE BASED TO COMPETENCE BASED EXAMINATION.

It was resolved to approve the minutes of the expert committee constituted to frame the scheme of practical / viva voce examination for P.G Non-Clinical Degree courses from knowledge based to competence based Examination with the modifications listed below.

ANATOMY

Practical examination- 2 days

Maximum Number of candidates per day –3

Day 1	Session	Duration	Marks
Practical –I –Gross Anatomy (Dissection)	F.N	3 hours	75
Practical II - Histology	A.N	3 hours	75

Break up details –Practical –II

1.Five Histology Slides (to be drawn before the discussion)	5X10 =50 marks
2.Section cutting	10 marks
3.Staining of one paraffin section	10 marks
4.Embedding of one Paraffin Block-	5 marks

Day 2

Practical III – Embryology –2 slides (2X10=20)	- 20 marks
Neuro anatomy –2 slides	–20 marks
Brain Dissection	–10 marks
	Total - 50 Marks
Practical IV - OSPE – 5X10 =50 marks	Total – 50 Marks

To include OSPE in

- 1.Limbs –2 charts
- 2.Abdomen and pelvis-2 charts

3. Head and neck - 2 charts
Neuroanatomy & Thorax –2 charts

Total Marks –250
Passing Minimum –125

VIVA

1. Viva -50 marks
 2. Log Book - 50 marks
 3. Pedagogy - 50 marks
- Pedagogy should be with chalk and board only

Total - 150 marks passing Minimum –75 Marks

4. Discussion on dissertation - 50 marks

	Maximum Marks	Passing Minimum
PRACTICALS	250	125
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

PHYSIOLOGY

Practicals - 2 days

- I Human Lab -70 Marks
- II Animal Lab -80 Marks
- III Hematology Lab -30 Marks
- IV OSPE - 20 Marks

I Human Lab

1. Clinical examination of systems - 20 marks
2. Human experiments (eg. Recording & reporting of ECG, EEG, NCU, Evoked potentials, Spirometry - 30 marks
3. Problem Solving exercises -20 marks
Eg. Case discussion, Interpretation of lab values like ABG,

electrolytes etc

II Animal Lab

1. Whole animal in Vivo experiments (ECG, BP, Response recording)
- 40 marks
2. Isolated organ - 40 marks
 - a. Isolated whole heart
 - b. Smooth muscle
 - c. Skeletal Muscle

III Hematology lab -30 marks

IV OSPE 5 Stations X 4 Marks = 20 marks

One skilled station –Preparation of Solutions

Four response stations –Statistics (compulsory)

-Others can be: Instruments , histology etc

Total marks – 200

Passing Minimum –100 marks

VIVA

1. Viva -50 marks
 2. Log Book - 50 marks
 3. Pedagogy - 50 marks
- Pedagogy should be with chalk and board only

Total - 150 marks

passing Minimum –75 Marks

4. Discussion on dissertation - 50 marks

	Maximum Marks	Passing Minimum
PRACTICALS	200	100
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

M.D. BIOCHEMISTRY PRACTICALS

Aims and Objectives

- 1.The practical examination scheme should be in such a way that all three domains namely cognitive, psychomotor and effective domains are covered
- 2.The candidate should be able to trouble shoot and manage da to day problems that rises in the clinical laboratory related to the quality of results.
- 3.The candidate should be aware of the concepts and importance of lab accreditation

Part I

- 1.Thin layer / Paper Chromotography -30 marks
 - a. Aimed at identifying the unknown carbohydrate or amino acid
- 2 .Serum Protein Electrophoresis -30 marks
- 3.OSPE -40 marks

Eight stations of 5 marks each (8x5)

- a.Two performance stations(2X5)
- b.Six response stations(6x5)

Part II

- 1.Clinical cases –Charts discussion - 20 marks
 - a.Four charts of 5 marks each
 - b.Related to clinical biochemistry
- 2.Long case presentation and discussion - 30 marks
- 3.Estimation of any two analytes related to the case Discussed
(1 Kinetic and 1 endpoint assay) $2 \times 10 = 20$ - 20 marks
- 4.Validation of reagent kits -30marks
 - a.Minimum two kits $2 \times 15 = 30$ marks

Total Marks –200

Passing Minimum – 100

Kits Validation

Using samples of very high analyte concentration (actual patient samples, topped up patient samples, calibrators of high value, Internal quality controls) following parameters are to be assessed

1. Precision
2. Accuracy
3. Linearity
4. Limits of detection
5. Recovery

Examples of OSPE stations

Performance stations

1. Coagulation profile
 - a. Prothrombin time
 - b. Activated Partial thromboplastin time
2. Methylamine test for detecting fructose
3. Mucic acid test for detecting galactose
4. Schwartz Watson test for differentiating urobilinogen from porphobilinogen
5. Neumann's test for detecting Phosphorus in casein

Response stations

1. Identification of Hemoglobin variants
2. Levey- Jenning's chart showing warning or rejection rules
3. Creatinine clearance calculation based on given values and normogram
4. Double reciprocal plot to identify the type of enzyme inhibition
5. Precision check of a given set of IQC results/ patients samples using standard deviation and coefficient of variation.

VIVA

1. Viva -50 marks
 2. Log Book - 50 marks
 3. Pedagogy - 50 marks
- Pedagogy should be with chalk and board only

Total - 150 marks passing Minimum –75 Marks

4. Discussion on dissertation - 50 marks

	Maximum Marks	Passing Minimum
PRACTICALS	200	100
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

M.D FORENSIC MEDICINE
Practical Scheme for three days

Day 1

- | | | |
|----------------------------------|------------|------------|
| 1. Adult Autopsy | -2 hours | -50marks |
| 2. Foetal Autopsy | -1 ½ hours | -30 marks |
| 3. Spotters (20 No.) | - 40 mins | -20 marks |
| a) Pathology specimens - 5 | | |
| b) Forensic Specimens -10 | | |
| c) Clue materials and Photos - 5 | | |
| 4. Clinical Forensic Medicine | | |
| a. Drunkenness examination | -30 mins | -20 marks |
| b. Injury case | - 30 mins | -20 marks |
| c. Sexual offences | - 40 mins | - 20 marks |

Day 2

- | | | |
|--|----------|------------|
| 1. Forensic anthropology & Odontology | | |
| a. Age estimation by using dental and physical examination | -40 min | - 20marks |
| b. Cluster of bones examination | -40 min | - 20marks |
| c. Cluster of X ray Examination | - 40 min | -20marks |
| 2. Expert opinion on the documents of Medico legal case | | |
| | -60 min | - 20marks |
| (Documents – PMC, Forensic Science analysis reports, etc.) | | |
| 3. Analysis of Medicolegal photographs, videographs and expert opinion | - 60 min | - 20 marks |
| 4. Microscopic examination of tissues (4 Slides) | | |
| | - 60 min | - 20 marks |
| 5. Mock Court | - 60 min | - 20 marks |

Day 3

- | | | |
|--|----------------|------------|
| 1. Preparation of Postmortem certificate from the autopsy performed on Day 1 | -30 min | - 20 marks |
| 2. Psychiatric case interpretation | - 30 min | - 20 marks |
| 3. OSPE – 5 Stations, 8 marks each | 5x8 = 40 marks | |

OSPE Station

1. Viscera Packing

2. Packing and forwarding of blood stain/
Seminal Stain/or hair
3. Benzidine test for detection of blood stains
4. Experimental Forensic Medicine
5. Blood grouping
6. Gram Stain
7. Salivary Stain
8. Takayama's test

4. Toxicology case interpretation 10 min - 10 marks
5. Medical Negligence and Interpretation 10 min - 10 marks

Total Marks – 400 marks

Passing Minimum - 200

Afternoon

Pedagogy	-30 mins	-50 marks
Viva	- 20 mins	- 50 marks
Log book	- 20mins	- 50 marks

Total marks -150 marks

Passing Minimum -75

Discussion on Dissertation – 30 min

- 50 marks

	Maximum Marks	Passing Minimum
PRACTICALS	400	200
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50

marks

Total Marks -150 marks

PG Examination Pattern **MICROBIOLOGY**

Practical Exam: 3 Days

Practicals - 200 Marks

Day 1

1. Clinical Bacteriology

a. Pure culture – ESBL, MRSA to be Included - 40 marks

- b.Mixture –Clinical Specimen –50 marks
- 2.Bacteriological Technique(OSPE) –10 marks
- 3.Serology (Bacteriology and Virology to be included)
One conventional test, Bacteriology and Virology should be included. –25 marks
One Rapid test (OSPE) –10 marks
- 4.Staining and concentration Techniques for Mycobacterium tuberculosis-RNTCP Grade of the smear -10 marks

Day 2

Reporting and Discussion on Identification of Pure culture

Discussion on Clinical Specimen- Based on colony Morphology

- 5.Mycology – Identification of Fungal Cultures –15 marks
- 6.Parasitology - -20 marks

❖Processing and Identification of Ova and cysts in Stool samples.

Saline/Iodine/concentration Techniques

or

❖Blood Smear Examination for Malarial Parasite, Microfilaria & special Staining

Techniques for Stool Examination.

Day 3

7.Clinical Bacteriology –Final report

8.Clinical Microbiology Slides (Stained smears and Tissue Sections)with discussion 10 slides , 2 marks each -2X10

–20 marks

TOTAL – 200 MARKS

PASSING Minimum – 100 Marks

VIVA

- 9.Viva –50 marks
10. Pedagogy –50 marks
11. Log book Evaluation –50 marks

Total marks -150

Passing Minimum- 75 marks

Dissertation

12. Discussion on Dissertation -

- 50 marks

	Maximum Marks	Passing Minimum
PRACTICALS	200	100
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

i) Immunoserology and Virology are combined as SEROLOGY

Animal Experiments is to be removed and exercise on Mycobacterium tuberculosis is included.

ii) In syllabus for practicals, in Bacteriology techniques it should be Special Staining other than Acid Fast Base staining.

M.D PATHOLOGY

Day 1

Forenoon Session

1. Hematology Case/Clinical Pathology

- The candidate should examine the patient, take the history and order investigation
- Investigation results will be given
- Candidate should interpret the results and discuss the case

2. Grossing

One big specimen in presence of the examiners

Afternoon

1. Grossing Specimens for diagnosis and Discussion – 5 numbers

2. Hematology and cytology slides – 5+5=10

Day 2

Forenoon Session

1. Histopathology slides – 15 numbers

2.OSPE-10 stations

Afternoon

- 1.Viva
- 2.Log book
- 3.Dissertation

- Total Number of days of Practical examination –2 days
- Maximum of five candidates can be evaluated
- If there are more than five candidates, it has to be divided into 2 batches

M.D.PATHOLOGY

Day 1

<u>Forenoon Session</u>	Time allotted	Marks
1. Hematology Case/Clinical Pathology	2 ½ hours	50
2. Grossing	15 mins	25

<u>Afternoon Session</u>	Time allotted	Marks
1. Gross specimens for diagnosis and discussion	1 hour	25
2.Hematology and cytology slides	1 hour	100

Day 2

<u>Forenoon Session</u>	Time allotted	Marks
1. Histopathology slides and discussion	3 hours	150
2. OSPE	1 hour	50

Total marks - 400 marks Passing Minimum –200 Marks

<u>Afternoon Session</u>	Time allotted	Marks
1.Viva (Including Dissertation and Discussion)	1 hour	50
2. Log Book	1hour	50

Total Marks –100 Passing Minimum -50Marks

3. Discussion on Dissertation	1 hour	50
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OSPE stations

1. Autopsy (Compulsory)
2. Histotechniques (Compulsory)
3. Blood banking (Compulsory)
4. Clinical pathology
5. Immuno Histochemistry
6. Frozen Section
7. Special Stains
8. Electron microscopy
9. Molecular diagnostic techniques
10. Immunofluorescence.

Log Book

- Autopsy – Minimum 25 cases
- Histotechniques – Cutting, H&E stains and Special stains
- The log book should also have other details recorded meticulously like the total number of biopsies, cytology slides, Special techniques like immunohistochemistry
- No. of Lectures taken with topic, No. of practicals taken
- No. CME /Conference /Seminars / Journal clubs / CPC attended and presented.

	Maximum Marks	Passing Minimum
PRACTICALS	400	200
VIVA*	100	50
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

M.D PHARMACOLOGY

Practical Examination 2 days

Day 1

Morning 9AM-1 PM

BED SIDE CASE DISCUSSION - 2 hours - 70 marks

Afternoon 2-5 PM

1. Drug Evaluation methods (CAL) - 2 hours -30 marks

2. Objective structured Practical examination (OSPE)
- 1 hour - 100 marks

Day 2

Morning 9AM-1 PM

1. Toxicological Exercise (Chemical assay) -2 hours -30 marks
2. Bioassay Interpretation -30 marks
3. Protocol writing -30 Mins -20 marks
4. Journal Criticism (Written) - 30 Mins -20 marks

Total marks -300 marks Passing Minimum-150 marks
Afternoon 2- 5 PM

1. Viva - 50 maks
2. Discussion on Log Book- 50 marks
3. Pedagogy - 50 marks

Total marks - 150 Passing minimum - 75 marks

4. Discussion on Dissertation - 50 Marks

	Maximum Marks	Passing Minimum
PRACTICALS	300	150
VIVA*	150	75
Dissertation **	150	75

* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

** Dissertation – Dissertation evaluation by 2 examiners each for 50 Marks – 100 marks

Discussion on Dissertation - 50 marks

Total Marks -150 marks

Objective Structured Practical Examination

Skill demo station

1. Instrument Demonstration

- Photometer
- calorimeter
- pH meter
- Rotarod etc

2. Newer equipments like

- ELISA
- HPLC
- Microarray

- Spectrophotometer etc using their Pictures

Knowledge Station

1. Causality Analysis
2. ADR picture based questions
3. Calculation of Bioavailability,TDM,SSC
- 4.Selection of exercise/ cases
- 5.Exercise on Dog BP/Frog heart ot other charts

Pedagogy should be with chalk and board only – should be removed.

Regarding dissertation evaluations, it was suggested that the Dissertation evaluators should be from outside the state and the Practical Examiners should not be the evaluators for Dissertation.

I am to request that the above decision of the Standing Academic Board as mentioned as above may be communicated to all the Professors and Head of Departments for information and further follow - up action in this regard. I am also to request that a copy of this letter may be displayed on the Notice Board of the College/Hostel for information of the students concerned.

I request that the receipt of this letter may be acknowledged.

Yours faithfully,

for REGISTRAR (FAC)