IV

section

1

Skill Acquisition

Skill acquisition is a very important part of learners' progression to become competent. The Dreyfus model describes how individuals progress through various levels in their acquisition of skills and subsumes ideas with regard to how individuals learn.

As per the MCI GMR 2019, we need to record all the competencies listed at 'perform' and 'shows how' level in logbook. However, recording of 'Knows how' level competencies is not mandatory. If the subject expert feels that it is very important for student to show the evidence of acquiring a particular competency at 'knows how' level, then such competencies can be identified and students can be made to record it in logbook.

MCI has given logbook guidelines on identifying competencies for logbook entry and also format to enter in logbook. Also MCI has given illustrative examples to identify those competencies which need to be entered in logbook, along with set criteria for giving completion, numerical scoring if any and how students should show the documented evidence for acquisition of these competencies. In case the student fails to achieve competency, then we need to plan the remedial measures.

What is in this Section?

We have designed various checklists for assessing skill acquisition of certifiable competencies in Anatomy, Biochemistry and Physiology. We have provided a plan of what the student should do during the course of their learning to get completion for attainment of these competencies. We have identified all competencies in 'perform' and few at 'shows how' level subject wise, which needs to be documented.

How to Use This?

Instructions to Teachers

The contents are listed as follows:

1. **Competencies/sub-competencies identified:** We have given sub-competencies at 'perform'/'shows how' level and listed competency numbers under this heading. It may be single or a group of related competencies.
2. **Teaching learning sessions:** Here we have listed all those teaching learning sessions which are used to teach students.
3. **Activities attended/performed:** Here we have listed all the components of different teaching learning sessions which the student is expected to attend/perform for completion of competencies.

   Two rows are left blank for: **Other sessions:** This is provided for faculty to enter any extra sessions, if you feel it is required to attain the competencies.

   In case any of the given session is not applicable, it can be left blank as 'NA'.

4. **Criteria required for completion:** Here we have listed what all students should do to get completion.

   We have left one blank space here, which can be filled by faculty in case you need any extra criteria to be fulfilled.

5. **Assessment**

   a. Scoring is not required for completion of competencies. But, it may be planned by individual departments as a part of regular assessment.

   b. *For skill certification:* Faculty should assess students using checklists provided for certification of skills to certify student as competent.

   c. Number of times a student needs to be assessed for certification of skills can be decided by subject experts in your institution.

   d. We have left one blank space here, which can be filled by faculty in case anything extra is planned

6. **Documentation required:** How and where the activities need to be documented by students is given. One extra space is given, if any extra documentation is required.

7. **Others:** Here we have given some competencies of other phases where there is vertical integration of topics

Actions to be Considered for Incomplete Activities by Student

Student has to go through the session contents/videos and perform the activities as specified by concerned faculty in case he/she is absent for any of the sessions listed in tables given under each subject for specified competencies.

For skill certifications, if a student cannot perform to meet expectation level, then one chance can be given to him/her to repeat in the same session.

If student is still not able to meet expectation after repeat in same session, then student has to review the whole work with faculty and retake the activity as specified by the faculty.

Teachers need to provide appropriate and timely feedback to student as and when required

Other: If any other action is planned by individual institution, it can be mentioned here

This gives a clear framework for students and faculty on what is expected from students, how to document activities so that students can get completion for the predetermined competencies in logbook.

Instructions to Students

- Students should enter all the activities listed with date and faculty signatures as and when they complete the activity.
- Students should receive feedback from faculty regarding repeats/remedial measures if any and complete the activity as specified by teachers.
- Students should get certifications for all the competencies which need to be certified in each subject (Anatomy-1, Biochemistry-7, and Physiology-13).
- After entering all these components duly signed by faculty, students can enter the listed competencies in their logbook and take completion from respective faculty.

References

1. Regulations on Graduate Medical Education, 1997-Addition as part-II for MBBS course starting from academic year 2019–20 onwards. MCI-34(41)/2019-Med./161726 dated 04/11/2019 MCI notification.

https://www.mciindia.org/ActivitiWebClient/open/getDocument?path=/Documents/Public/Portal/Gazette/GME-06.11.2019.pdf

2. Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; pg 40–135
   https://www.mciindia.org/CMS/wp-content/uploads/2020/01/UG-Curriculum-Vol-I.pdf
3. Logbook guidelines for Undergraduate medical education program, Medical Council of India.
   https://www.mciindia.org/CMS/wp-content/uploads/2020/01/Logbook-Guidelines_17.01.2020–1.pdf

ANATOMY

What is in this Section?

This section of skill acquisition in Anatomy contains competency at 'perform' level for skill certification with components of activities listed to be performed by student.

A checklist for skill assessment is also provided for the same.

However, we have not listed 'shows how' level competencies in this section as they can be entered directly in logbook and get completion from respective teachers.

How to Use this?

Students can enter date with faculty signatures as and when he/she completes a particular activity listed.

Once he/she completes certification, student can enter the competency in logbook and get completion from respective teacher.

Skill certification—Histology—Identification of epithelium under microscope		
1. **Competencies identified** AN65.1		
2. **Teaching learning sessions** a. Lecture b. Practical c. Skill assessment session		
3. **Activities attended/performed**	**Date**	**Faculty name and sign**
a. *Lecture:* Learner attends lecture on different types of epithelium, functions and features of the epithelium.		
b. *Histology practical:* Identification of epithelium under microscope		
c. *Skill assessment:* Practical performance and viva voce using checklist for certification		
d. Others:		
4. **Criteria required for completion** a. Attending all sessions as above in 3 b. Documenting in practical record book c. Skill assessment: Practical performance and viva voce using checklist d. Others:	Yes/No Yes/No Yes/No	
5. **Assessment** a. *Scoring:* May be planned as a part of regular assessment b. *Rating* as per the checklist used for certification c. Others:		
6. **Documentation required** a. Documented in Practical Record Book: AN65.1 b. Checklist used for certification c. Others		

Actions to be Considered for Incomplete Activities by Student

a. Student has to go through the session contents/videos and perform the activities as specified by concerned faculty in case he/she is absent for any of the above sessions

b. For skill certifications, if a student cannot perform to meet expectation level, then one chance can be given to him/her to repeat in the same session.

c. If student is still not able to meet expectation after repeat in same session, then student has to review the whole work with faculty and retake the activity as specified by the faculty.

d. Teachers need to provide appropriate and timely feedback to student as and when required

e. Others

Suggested Checklist for Skill Certification by Faculty

Competency: AN65.1—Identification of epithelium under microscope				
Sl. no.	***Assessment criteria***	***Date of assessment Mark 'Yes/No'***		
1.	Student is able to list all components of epithelium correctly			
2.	Student is able to identify and explain the different types of simple epithelium with their apical modifications.			
3.	Student is able to draw neat labeled diagram of all types of simple epithelium using H and E pencils only.			
4.	Student is able to list the important examples of simple epithelium correctly.			
5.	Student is able to explain the 2 functions of each simple epithelium.			
6.	Student is able to identify different strata of compound (stratified) epithelium correctly.			
7.	Student is able to differentiate between stratified squamous epithelium of keratinized and non-keratinized epithelium and transitional epithelium correctly.			
8.	Student is able to draw neat labeled diagram of compound epithelium using H and E pencils only.			
9.	Student is able to explain the 2 major functions of each subtype of compound epithelium.			
10.	Student is able to list the important examples of compound epithelium correctly.			
Overall performance (B/M/E)				
Name of evaluator				
Signature of evaluator				
Signature of student				

E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Below expectations: Feedback to student to be given and necessary actions can be taken: 1. Repeat in same session, 2. Remedial measures

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Name and Signature of Evaluator: Date:

BIOCHEMISTRY

What is in this Section?

This section provides a ready plan of **identified competencies in Biochemistry** along with all the details as mentioned by MCI. The plan is based on those competencies which are at 'perform' or 'shows how' level and also covers the competencies which need to be certified.

This gives a clear picture to the student that, if he/she has to get completion for a particular competency, then **what he/she is supposed to do?** Various teaching learning sessions which the student has to attend and perform in order to get completion for said competency are listed. Any additional activities, if performed by your institute, can be added in blank spaces provided.

Different teaching learning sessions are grouped together for a particular competency or group of competencies, e.g., all competencies concerned to liver function tests (LFT) and disorders are listed together. All the activities to be performed by student for giving completion to a group of competencies covering LFT are considered. So, if we need to certify that student can estimate serum total protein, then it is mentioned that student needs to attend all classes related to LFT with case discussions, along with certification using checklist to get completion.

Criteria for successful completion of competency are given along with numerical score and documentations required for completion.

A few skill competencies with **vertical integration** which share common SLOs are mentioned. This gives an input to faculty on what the student has learnt in Phase 1 concerned to a particular competency when he goes to next phase. Then the students learning trajectory can continue further upwards from this level.

How to Use this Section?

Instructions for Teachers

- List of competency numbers are given with criteria for completion in the form of a table.
- Student should be asked to enter the dates when he/she attends a particular teaching session as mentioned and take signature of faculty.
- Space is provided to add additional sessions if conducted by your institute and you feel it is required to give completion.
- For certifiable competencies listed, student needs to be evaluated using checklist given for individual competencies.

- **For certification of skill acquisition:** Specified detailed **checklists for certifiable skills/competencies** with criteria to assess knowledge (KH level) and skill domain (SH/P level) are provided. Each criteria may be assessed by different tools (OSPE/Practical performance/viva) using appropriate scoring pattern.
- Tick 'YES/NO' for each assessment criteria listed. Consider 'YES' as '1' mark and 'NO' as '0' mark. For example, out of 12 criteria listed, if number of YES is 9, then total marks of student is 9 out of 12. Convert it to percentage: $9/12 \times 100 = 75\%$ and rate overall performance as below.
- Overall performance in these assessments for certification can be graded as below*:
  - **E—Exceeds expectations**: Student is able to meet **>90% criteria**, and reports the test results with appropriate interpretations independently. Student is eligible to be certified as to have achieved this competency.
  - **M—Meets expectations:** Student is able to meet **>70% criteria** in 1st attempt and **up to 90% criteria on immediate repetition in same session**, and reports the test results with appropriate interpretations independently. Student is eligible to be certified as to have achieved this competency.
  - **B—Below expectations**: Student is **not able to meet 70% criteria even with immediate repetition**. Hence, he/she needs to review the whole work with faculty and report the test results with appropriate interpretations independently followed by re-assessment to certify the same.

    Grading of performance can be modified as per your requirements.
- **Feedback to students:** After each assessment, the respective faculty shall give the feedback to students regarding the performance/areas for improvement/reassessment.
- After student completes attending and performing all the sessions mentioned, he/she can enter the identified competency in logbook and get signed by faculty as completed.
- The entries made in this book act as a documented evidence for the entry made in logbook for completion.

Actions to be Considered for Incomplete Activities by Student

- Student has to go through the session contents/videos and perform the activities as specified by concerned faculty in case he/she is absent for any of the sessions listed in tables given below for specified competencies
- For skill certifications, if a student cannot perform to meet expectation level, then one chance can be given to him/her to repeat in the same session.
- If student is still not able to meet expectation after repeat in same session, then student has to review the whole work with faculty and retake the activity as specified by the faculty.
- Teachers need to provide appropriate and timely feedback to student as and when required.
- Other: If any other action is planned by individual institution, it can be mentioned here.

Instruction to Students

- Students should enter all the activities listed with date and obtain faculty signatures as and when they complete the activity.
- Students should receive feedback from faculty regarding repeats/remedial measures if any and complete the activity as specified by teachers.
- Students should get certifications for all the competencies which need to be certified.
- After entering all these components duly signed by faculty, students can enter the listed competencies in their logbook and take completion from respective faculty.

Biochemistry Skill Acquisition Competencies Identified for Logbook Entry

Practical: Analysis of normal constituents of urine		
1. **Competency identified:** 01 (BI11.4)		
2. **Teaching learning sessions** a. Small group teaching (SGT) session b. DOAP session		
3. **Activities attended/performed**	**Date***	**Faculty name and sign**
a. *SGT:* Learner attends small group discussion on the normal physical characteristics and the normal constituents of urine along with principle, procedures and observations of tests done to detect these constituents along with interpretations		
b. *DOAP session:* Learner performs the analysis of given urine sample for physical characteristics and chemical tests for normal constituents (organic and inorganic) of urine and interprets the findings (PE21.11*)		
c. *Skill assessment:* Practical performance and viva voce using checklist for certification		
d. Other session		
e. Others session		
*All dates can be entered in one row, if multiple sessions are conducted		
4. **Criteria required for completion**		
a. Attending all sessions as above in 3	Yes/No	
b. Performing the analysis for 3b	Yes/No	
c. Documenting in practical record book	Yes/No	
d. *Skill assessment:* Practical performance and viva voce using checklist	Yes/No	
e. Others:		
5. Assessment a. *Scoring:* May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others		
6. Documentation required a. Documented in Practical Record Book b. Checklist used for certification c. Others:		
7. **Others:** SLOs of *PE21.11—Vertical integration are covered as above		

Suggested Checklist for Evaluation

Analysis of normal constituents of urine (BI11.4)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student lists all physical characteristics of normal urine as per the manual content provided correctly			
2.	Student performs the physical examination of urine sample for volume, appearance, color, odor by visual observation correctly and interprets the results.			
3.	Student performs the physical examination of urine sample for pH using pH paper provided correctly as per the given procedure and interprets the results.			
4.	Student performs the physical examination of urine sample for specific gravity using urinometer provided and does the temperature corrections correctly as per the given procedure, and interprets the results.			
5.	Student interprets the physiological variations in physical characteristics of normal urine			
6.	Student lists common organic constituents (urea, uric acid, creatinine, urobilinogen) of normal urine and the tests to be performed			
7.	Student explains the principles of all organic tests performed for normal constituents of urine			
8.	Student performs tests for urea in given urine sample according to the given procedure and interpret the observations correctly			
9.	Student performs tests for uric acid in given urine sample according to the given procedure and interpret the observations correctly			
10.	Student performs tests for creatinine in given urine sample according to the given procedure and interpret the observations correctly			
11.	Student performs tests for urobilinogen in given urine sample according to the given procedure and interpret the observations correctly			
12.	Student interprets the results of all the tests for organic constituents of normal urine along with normal levels in urine			
13.	Student lists common inorganic constituents (calcium, phosphates, sulfates, ammonia) of normal urine and the tests to be performed			
14.	Student explains the principles of all inorganic tests performed for normal constituents of urine			
15.	Student performs tests for calcium in given urine sample according to the given procedure and interprets the observations correctly			
16.	Student performs tests for phosphates in given urine sample according to the given procedure and interprets the observations correctly			
17.	Student performs tests for sulfates in given urine sample according to the given procedure and interprets the observations correctly			

Contd.

Analysis of normal constituents of urine (BI11.4) *(Contd.)*				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
18.	Student performs tests for ammonia in given urine sample according to the given procedure and interprets the observations correctly			
19.	Student interprets the results of all the tests performed for inorganic constituents of normal urine along with normal levels in urine			
20.	Student interprets the physiological and pathological variations in organic and inorganic constituents of urine correctly			
	Overall performance (B/M/E)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

Overall performance: E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Practical: Analysis of abnormal constituents of urine		
1. Competency identified: 02 a. **BI11.4** b. **BI11.20**		
2. Teaching learning sessions a. Small group teaching (SGT) session b. Practical session c. DOAP sessions		
3. Activities attended/performed	**Date***	**Faculty name and sign**
a. *SGT:* Learner attends small group discussion on the abnormal physical characteristics and the principles, procedures and observation of tests to detect abnormal constituents of urine along with interpretations		
b. *SGT:* Learner attends discussion on presence of glucose (glycosuria) and ketone bodies in urine in pathological states		
c. *SGT:* Learner attends discussion on presence of protein, basis and rationale of biochemical tests done in proteinuria (BI11.7) and blood in urine (hematuria) in pathological states		
d. *SGT:* Learner attends discussion on presence of bile salts and bile pigments in urine in pathological states		
e. *Practical:* Learner performs urine dipstick test for abnormal analytes using the dipsticks provided and interprets the results (PE33.6*, IM11.3**)		
f. *DOAP session:* Learner performs analysis of given urine sample 1 from patient with diabetic ketoacidosis for physical characteristics, chemical tests for abnormal constituents (glucose and ketone bodies), interprets the findings and correlates with pathological state		
g. *DOAP session:* Learner performs analysis of given urine sample 2 from patient with urinary tract infection for physical characteristics, chemical tests for abnormal constituents (protein and blood), interprets the findings and correlates with pathological state(BI11.7)		
h. *DOAP session:* Learner performs analysis of given urine sample 3 from patient with obstructive liver disease for physical characteristics, chemical tests for abnormal constituents (bile salts and bile pigments), interprets the findings and correlates with pathological state		
i. *Skill assessment for f, g, h:* Practical performance and viva voce using checklist for Certification		
j. Other session:		
k. Other session:		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion a. Attending sessions as above b. Performing the analysis for 3e, 3f, 3g and 3h. c. Documenting in practical record book d. Skill assessment for 3f, 3g, 3h: Practical performance and viva voce using checklist e. Others	Yes/No Yes/No Yes/No Yes/No	

Contd.

Practical: Analysis of abnormal constituents of urine *(Contd.)*
5. Assessment a. *Scoring:* May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others:
6. Documentation required a. Documented in Practical Record Book b. Checklist used for certification c. Others
7. Others: SLOs of following competencies are covered as above *PE33.6: Urine dipsticks for sugar (vertical integration) **IM11.13: Urinary dipsticks for ketones (vertical integration)

Suggested Checklist for Evaluation

Analysis of abnormal constituents of urine (BI11.4 and BI11.20)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student lists the common abnormal constituents of urine (reducing substance, ketone bodies, proteins, blood, bile salts, bile pigments)			
2.	Student performs the physical examination of given urine sample for volume, appearance, color, odor by visual observation correctly			
3.	Student performs the physical examination of given urine sample for pH using pH paper provided correctly as per the given procedure			
4.	Student performs the physical examination of given urine sample for specific gravity using urinometer provided and does the temperature corrections correctly as per the given procedure.			
5.	Student interprets the results of all the above physical examination of urine sample in different pathological conditions			
6.	Student performs urine dipstick test for abnormal analytes using the dipsticks provided correctly and interprets the results			
7.	Student lists the relevant chemical tests to be performed to detect abnormal constituents of urine			
8.	Student explains the principles of all the chemical tests performed correctly			
9.	Student performs appropriate chemical tests to detect reducing substances in the given urine sample according to the procedure given, and records the observations as present or absent correctly			
10.	Student performs appropriate chemical tests to detect ketone bodies in the given urine sample according to the procedure given, and records the observations as present or absent correctly			
11.	Student performs appropriate chemical tests to detect proteins in the given urine sample according to the procedure given, and records the observations as present or absent correctly			
12.	Student performs appropriate chemical tests to detect blood in the given urine sample according to the procedure given, and records the observations as present or absent correctly			

Contd.

Analysis of abnormal constituents of urine (BI11.4 and BI11.20)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
13.	Student performs appropriate chemical tests to detect bile salts in the given urine sample according to the procedure given, and records the observations as present or absent correctly			
14.	Student performs appropriate chemical tests to detect bile pigments in the given urine sample according to the procedure given, and records the observations as present or absent correctly			
15.	Student identifies the observations of all the tests by visual observation as positive or negative correctly and interprets the findings correctly.			
16.	Student interprets and associates various abnormal constituents of urine with different pathological conditions correctly with appropriate reasoning.			
	Overall performance (B/M/E)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

E—Exceeds expectations: Student is able to meet > 90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet < 70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Practical: Quantitative estimation of glucose in serum		
1. Competency identified: 01 a. BI11.21		
2. Teaching learning sessions a. Interactive lectures (IL) b. Small group teaching (SGT) sessions c. DOAP session d. CBL sessions		
3. Activities attended/performed	**Date***	**Faculty name and sign**
a. *IL:* Learner attends class on blood glucose regulation (BI3.9)		
b. *SGT:* Learner attends on different methods of estimation of glucose in serum and their clinical significance		
c. *DOAP session:* Learner estimates glucose in serum by given method, interprets the findings and correlates with pathological conditions (BI3.10*)		
d. *Practical/DOAP session:* Learner estimates capillary blood glucose by glucometer (IM11.12**), interprets the findings and correlates with pathological conditions (BI3.10)		
e. *CBL session:* Learner attends CBL session on glucose tolerance test and its interpretation (BI3.8)		
f. Learner attends TL session on laboratory tests in diabetes mellitus (BI11.17)		
g. Learner attends TL session on diabetes mellitus and its complications (BI3.10)		
h. *Skill assessment for BI11.21 (glucose in serum):* Practical performance and viva voce using checklist for certification		
i. Other session:		
j. Other session:		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion a. Attending all sessions as above in 3 b. Performing the analysis for 3c and 3d c. Documenting in practical record book d. Skill assessment for 3c: Practical performance and viva voce using checklist for certification e. Others	Yes/No Yes/No Yes/No Yes/No	

Contd.

Practical: Quantitative estimation of glucose in serum *(Contd.)*
5. Assessment a. *Scoring:* May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others
6. **Documentation required** a. Documented in Practical Record Book b. Checklist used for certification c. Others
7. Others: SLOs of following competencies are covered as above *BI3.10: Interpretation of results of blood glucose levels **IM11.12: Capillary blood glucose test using glucometer (vertical integration)

Suggested Checklist for Evaluation

Estimation of glucose in serum (BI11.21)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student explains the principle of estimation of glucose in serum by given method correctly			
2.	Student lists other methods for estimation of glucose in serum with advantages and disadvantages correctly			
3.	Student performs the estimation of serum glucose in given sample according to the given procedure correctly			
4.	Student calculates the concentration of serum glucose based on observations and given standard concentration correctly.			
5.	Student writes the report of the serum glucose correctly with appropriate units and reference intervals			
6.	Student mentions the sample collection tube for estimation of plasma glucose correctly with appropriate reasoning			
7.	Student mentions the right time for collecting fasting and postprandial blood samples for estimation of serum glucose			
8.	Student interprets the serum glucose report of the given sample according to current standard guidelines as normal, impaired levels or diabetic.			
9.	Student lists the causes of hyperglycemia and hypoglycemia correctly			
10.	Student relates the findings of test result with clinical condition with reasoning appropriately			
11.	Student is able to extrapolate the results of plasma glucose in different clinical conditions appropriately			
	Overall performance (B/M/E)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Practical: Quantitative estimation of serum creatinine and urea		
1. Competency identified: 02 a. BI11.7 b. BI11.21		
2. Teaching learning sessions a. Small group teaching (SGT) sessions b. DOAP sessions c. Case based learning (CBL) sessions		
3. Activities attended/performed	**Date***	**Faculty name & sign**
a. *SGT:* Learner attends SGT session on renal function tests (BI6.14)		
b. *SGT:* Learner attends discussion on different methods of estimation of serum and urine creatinine, creatinine clearance and their clinical significance		
c. *DOAP session:* Learner estimates serum creatinine by given method and calculates creatinine clearance correctly using appropriate formulae, interprets the findings and correlates with pathological conditions		
d. *SGT:* Learner attends discussion on different methods of estimation of serum urea, BUN and their clinical significance		
e. *DOAP session:* Learner estimates serum urea correctly by given method, calculates BUN using appropriate formulae, interprets the findings and correlates with pathological conditions		
f. *CBL:* Learner attends CBL session on renal failure, nephrotic syndrome (BI11.17)		
g. *Skill assessment for c:* Practical performance and viva voce using checklist for Certification		
h. *Skill assessment for e:* Practical performance and viva voce using checklist for Certification		
i. Other session		
j. Other session		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion a. Attending all sessions as above in 3 b. Performing the analysis for 3c and 3e c. Documenting in practical record book	 Yes/No Yes/No Yes/No	

Contd.

Practical: Quantitative estimation of serum creatinine and urea *(Contd.)*		
d. Skill assessment for 3c and 3e: Practical performance and viva voce using checklist	Yes/No	
e. Others		
5. Assessment		
a. *Scoring*: May be planned as a part of regular assessment		
b. Rating as per the checklist used for certification		
c. Others		
6. Documentation required		
a. Documented in Practical Record Book		
b. Checklist used for certification		
c. Others		

Suggested Checklist for Evaluation

Estimation of serum creatinine and calculation of creatinine clearance (BI 11.7, BI 11.21)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student explains the principle of estimation of serum creatinine by the given method of correctly			
2.	Student mentions other methods for estimation of serum creatinine with advantages and disadvantages			
3.	Student performs the estimation of serum creatinine in given sample according to the given procedure correctly			
4.	Student calculates the concentration of the given analyte in serum using standard concentrations given correctly			
5.	Student writes the report of the serum creatinine correctly with appropriate units, reference intervals and interprets the result correctly.			
6.	Student calculates the urine creatinine concentration with given OD readings of blank, standard and test using standard concentration given correctly			
7.	Student mentions the indications and procedure for doing creatinine clearance test correctly			
8.	Student mentions the advantages of using creatinine as an ideal substance for clearance studies			
9.	Student calculates creatinine clearance using appropriate formula correctly and interprets the results			
10.	Student lists the conditions in which serum creatinine levels are altered correctly			
11.	Student explains the biochemical basis of altered levels of creatinine in serum in different pathological conditions			
12.	Student lists the conditions in which urine creatinine levels are altered			

13.	Student explains the biochemical basis of altered levels of creatinine in urine in different pathological conditions and utility of albumin creatinine ratio (ACR)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Suggested Checklist for Evaluation

Estimation of urea in serum (BI11.21)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student explains the principle of estimation of serum urea by given method correctly			
2.	Student mentions other methods for estimation with advantages and disadvantages correctly			
3.	Student performs the estimation of serum urea in given sample according to the given procedure correctly			
4.	Student calculates the concentration of the serum urea using standard concentrations given correctly.			
5.	Student writes the report of the serum urea correctly with appropriate units and reference intervals			
6.	Student calculates blood urea nitrogen using appropriate formula and explains its importance			
7.	Student enumerates causes for pre-renal, renal and post-renal uremia correctly			
8.	Student relates the result of serum urea clinical condition appropriately			
9.	Student extrapolates the results of serum urea in different clinical conditions appropriately			
	Overall performance (B/M/E)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Practical: Quantitative estimation of serum protein, albumin, bilirubin, SGOT/SGPT, alkaline phosphatase		
1. Competency identified: 04 a. BI11.8 b. BI11.12 c. BI11.13 d. BI11.14		
2. Teaching learning sessions a. Small group teaching (SGT) sessions b. Case based learning (CBL) sessions c. DOAP sessions d. Practical sessions		
3. Activities attended/performed	**Date***	**Faculty name and sign**
a. *SGT:* Learner attends SGT session on liver function tests (BI6.14)		
b. *SGT:* Learner attends small group discussion on different methods of estimation of serum protein, albumin, A:G ratio calculation and their clinical significance		
c. *DOAP session:* Learner estimates serum total protein, serum albumin correctly by given method, calculate A:G ratio using appropriate formulae, interprets the findings and correlates with pathological conditions		
d. *SGT sessions:* Learner attends small group discussion on different methods of estimation of following with clinical significance: ✦ Serum bilirubin ✦ Serum SGOT/SGPT ✦ Serum alkaline phosphatase		
e. *Practical sessions:* Learner estimates the following by given method: ✦ Serum bilirubin ✦ Serum SGOT/SGPT ✦ Serum alkaline phosphatase Interpret the findings and correlate with pathological conditions		
f. *CBL:* Learner attends CBL session on cases of jaundice (BI11.17)		
g. *Skill assessment for BI11.8 (total protein):* Practical performance and viva voce using checklist for certification		
h. Other session		
		Contd.

Practical: Quantitative estimation of serum protein, albumin, bilirubin, SGOT/SGPT, alkaline phosphatase *(Contd.)*		
i. Other session		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion		
a. Attending all sessions as above in 3	Yes/No	
b. Performing the analysis for 3c and 3e	Yes/No	
c. Documenting in Practical Record Book	Yes/No	
d. Skill assessment for 3c: Practical performance and viva voce using checklist for Certification	Yes/No	
e. Others		
5. **Assessment** a. *Scoring:* May be planned as a part of regular assessment b. *Rating* as per the checklist used for certification c. Others		
6. **Documentation required** a. Documented in Practical Record Book b. Checklist used for certification c. Others		

Suggested Checklist for Evaluation

Demonstrate estimation of serum protein, albumin and A:G ratio (BI11.8, BI11.21)				
Sl. no.	***Assessment criteria***	***Mark Yes/No Date of evaluation***		
1.	Student explains the principle of estimation of serum total protein by given method correctly			
2.	Student explains the principle of estimation of serum albumin by given method correctly			
3.	Student performs the estimation of serum total protein in given sample as per the given procedure correctly			
4.	Student performs the estimation of serum albumin in given sample as per the given procedure correctly			
5.	Student calculates the concentration of serum total protein using standard concentration given correctly			
6.	Student calculates the concentration of serum albumin using standard concentration given correctly			
7.	Student calculates total globulin level correctly			
8.	Student calculates A:G ratio correctly			
9.	Student writes the report of the serum total protein and albumin, with A:G ratio correctly with appropriate units and reference intervals			
10.	Student enumerates the causes for hypoproteinemia/hypoalbuminemia correctly			
11.	Student enumerates the causes of hyperproteinemia correctly			
12.	Student enumerates and explains the causes of reversed A:G ratio correctly			
13.	Student relates the results of serum total protein, albumin and A:G ratio with clinical condition appropriately			
14.	Student extrapolates the results of serum total protein and serum albumin in different clinical conditions appropriately			
	Overall performance (B/M/E)			
	Name of evaluator			
	Signature of evaluator			
	Signature of student			

E—Exceeds expectations: Student is able to meet >90% criteria; **M—Meets expectations:** Student is able to meet 70–90% criteria; **B—Below expectations:** Student is able to meet <70% criteria

Feedback to the Student
It is hereby certified that the student is competent to perform the above mentioned skill. Date of certification: Name and Signature of Evaluator:

Practical: Quantitative estimation of serum total cholesterol, HDL cholesterol, triglycerides		
1. Competency identified: 02: BI11.9, BI11.10		
2. Teaching learning sessions a. Interactive lectures (IL) b. Small group teaching (SGT) sessions c. Practical sessions d. CBL sessions		
3. Activities attended/performed	**Date***	**Faculty name and sign**
a. *IL:* Learner attends interactive lectures on cholesterol and lipoprotein metabolism (BI4.4)		
b. *SGT:* Learner attends small group discussion on different methods of estimation of serum total cholesterol and HDL cholesterol, triglycerides and their clinical significance		
c. *Practical session:* Learner estimates serum total cholesterol and HDL cholesterol, by given method, interprets the findings and correlates with pathological conditions		
d. *Practical session:* Learner demonstrates the ability to estimate serum triglycerides by given method, interprets the findings and correlate with pathological conditions		
e. *SGT:* Learner attends small group discussion on lipid profile (BI4.5)		
f. *CBL session:* Learner attends CBL session on dyslipidemia, myocardial infarction (BI 11.17)		
g. Other session		
h. Other session		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion a. Attending all sessions as above in 3 b. Performing the analysis for 3c and 3d c. Documenting in practical record book d. Others	 Yes/No Yes/No Yes/No	
5. Assessment a. *Scoring*: May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others		
6. Documentation required a. Documented in Practical Record Book b. Others		

Practical: Quantitative estimation of serum calcium and phosphorus		
1. **Competency identified:** 01: BI11.11		
2. Teaching learning sessions a. Interactive lectures (IL) b. Small group teaching (SGT) sessions c. Practical and CBL sessions		
3. Components of activity	**Date***	**Faculty name and sign**
a. *IL:* Learner attends interactive lectures on vitamin D functions and deficiency features (BI6.5)		
b. *IL:* Learner attends interactive lectures on calcium and phosphorus metabolism (BI6.9)		
c. *SGT:* Learner attends small group discussion on different methods of estimation of serum total calcium and their clinical significance		
d. *Practical session:* Learner estimates serum calcium by given method, interprets the findings and correlates with pathological conditions.		
e. *SGT:* Learner attends small group discussion on different methods of estimation of serum phosphorus and their clinical significance		
f. *Practical session:* Learner estimates serum phosphorus by given method, interprets the findings and correlates with pathological conditions		
g. *CBL session:* Learner attends CBL session on disorders associated with metabolism of calcium and phosphorus (BI6.5, BI6.10)		
h. Other session		
i. Other session		
*All dates can be entered in one row, if multiple sessions are conducted		
4. Criteria required for completion a. Attending all sessions as above in 3 b. Performing the analysis for 3e and 3g c. Documenting in practical record book d. Others	 Yes/No Yes/No Yes/No	
5. Assessment a. *Scoring:* May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others		
6. Documentation required a. Documented in Practical record book b. Others		

PHYSIOLOGY

Competency Based Medical Education Undergraduate Program has already given a set of skill competencies in its book, amongst those which are in the level of "shows how" and "performs" has to be acquired by the learners.

What is in this Section?

For phase 1 MBBS student in Physiology, there are 13 skill competencies in various systems under "perform" which has to be definitely acquired by learners. Those skills will be taught by DOAP (Demonstration Observe Assist Perform) sessions. Assessment of those skills is very crucial. We have designed the skill acquisition modules which guides learner towards the components of activities to be completed to acquire these skills like attending DOAP Sessions, documenting in record book and assessment sessions. For skill assessment, we have designed standard OSCE (Objective Structured Clinical Examination) checklist referring standard books. As CBME emphasizes integrated assessment, we have allotted marks for all domains of learning like psychomotor skills, communication and behavioral skills (7 marks) and cognitive domain (3 marks). A total of 10 marks allotted for each skill certification.

How to Use it?

Instructions for Teachers

1. Evaluator who is using checklist for certifying the learner must appropriately mark (Yes) on those steps which learner does correctly and mark (No) which learner doesn't perform correctly.
2. After completing each checklist marking, evaluator must count the number of (Yes) marks.
3. Evaluator must reduce the scoring to 7. While reducing score make it to a round figure.
4. Then corresponding viva voce can be conducted, and allotted marks will be 3.
5. Then evaluator has to add score in both skills and viva voce, and decide score out of total 10 marks.

Criteria defined for declaring competent:

1. Those learners who scores >7 total marks will be declared as competent and can be certified by the evaluator.

Actions to be considered when student does not complete the activity:

1. If learner scores < total 7 marks, he/she will be not declared as competent. For such learner, evaluator must give timely feedback and decide the actions.
2. The learner can be made to repeat in same session.
3. If learner fails again, he/she can repeat again in different session.
4. If learner fails even after 2 attempts, then they must review the whole work with the teachers and remedial measures can be planned.

5. Student has to go through the session contents/videos and perform the activities as specified by concerned faculty in case he/she is absent for any of the above sessions.

Scoring and Certification of Student Competency		
Criteria	***Decision***	***Competent***
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

It is mandatory that each learner must get certified for all above 13 competencies in physiology which is an essential prerequisite for learners to take summative examination.

Instruction to Students

- Students should enter all the activities listed with date and obtain faculty signatures as and when they complete the activity.
- Students should receive feedback from faculty regarding repeats/remedial measures, if any, and complete the activity as specified by teachers.
- Students should get certifications for all the competencies which need to be certified.
- After entering all these components duly signed by faculty, students can enter the listed competencies in their logbook and take completion from respective faculty.

References

1. Michael Swash. Hutchison's clinical methods. WB Saunders publication.2002. 21st edition.
2. GK Pal, Pravati Pal. Textbook of practical physiology. Orient Longman Publications. 2005. 2nd edition.

Clinical Examination of Cardiovascular System

Number of skills that require certification: 03 (PY5.12)

Number of times each skill needs to be done to be certified for performance: 01

- Record blood pressure and pulse at rest in a volunteer or simulated environment.
- Record blood pressure and pulse at different grades of exercise in a volunteer or simulated environment.
- Record blood pressure and pulse at various postures in a volunteer or simulated environment.

1. Competency identified: PY5.12		
2. Teaching learning sessions a. DOAP session b. Interactive lectures/CBL c. Skill certification Session		
3. Activities attended/performed	**Date**	**Faculty name and sign**
a. DOAP session: Learner records pulse correctly as per the procedure demonstrated		
b. Interactive lecture: Learner attends IL on blood pressure—definition, normal values, components and regulation (PY5.9)		
c. DOAP session: Learner records blood pressure correctly as per the procedure demonstrated		
d. DOAP session: Learner records blood pressure and pulse correctly at different grades of exercise as per the procedure demonstrated		
e. DOAP session: Learner records blood pressure and pulse correctly at various postures as per the procedure demonstrated		
f. Skill assessment session: Practical performance using checklist and viva voce for certification of recording of blood pressure and pulse at rest		
g. Skill assessment session: Practical performance using checklist and viva voce for certification of recording of blood pressure and pulse at different grades of exercise		
h. Skill assessment session: Practical performance using checklist and viva voce for certification of recording of blood pressure and pulse at various postures.		

i. Others:		
j. Others:		
4. Criteria required for completion		
a. Attending interactive lecture	Yes/No	
b. Attending above DOAP sessions	Yes/No	
c. Documenting in practical record book	Yes/No	
d. *Skill assessment:* Practical performance using checklist and viva voce	Yes/No	
e. Others:		
5. Assessment		
a. *Scoring:* May be planned as a part of regular assessment		
b. Rating as per the checklist used for certification		
c. Others:		
6. Documentation required		
a. Documentation in Practical Record Book: Required		
b. Checklist used for certification		
c. Others:		
7. Others:		
a. Instruments required: Stethoscope and sphygmomanometer		

Practical: Recording of Blood Pressure and Pulse at Rest (PY5.12)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of recording of pulse at rest

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
1.	Student greets the subject, asks for his/her name, age and occupation			
2.	Gives proper instructions to the subject			
3.	Stands on the right side of the subject			
4.	Positions the subject's hand in semi-pronated and slightly flexed at wrist			
5.	Places three fingers (ring, middle and index) on radial artery, lateral to flexor carpi radialis muscle tendon just above wrist.			
6.	Records the pulse rate by counting the pulse for one minute.			
7.	Records the rhythm of pulse			
8.	Records the volume of pulse			
9.	Records the character of pulse			
10.	Records condition of vessel wall (occludes blood flow with index finger and empties vessel by ring finger and palpates the vessel wall against bone with middle finger)			
11.	Records equity in volume on both sides of radial pulse			
12.	Records radio-radial delay			
13.	Records radio-femoral delay			
14.	Records other peripheral pulses a. *Carotid artery:* Places thumb in between trachea and sternocleidomastoid muscle. b. *Brachial artery:* Places thumb in cubital fossa medial to tendon of biceps brachii c. *Posterior tibial artery:* Places three fingers, below and behind medial malleolus d. *Dorsalis pedis artery:* Places three fingers on dorsum of foot lateral to extensor hallucis longus tendon.			
15.	Thanks the subject			
16.	Reports the findings to examiner			
Total points scored by student (/16)				
Condense score to 7				

Scoring of Student for the Certification of Recording of Pulse at Rest

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	**Decision**	**Competent**
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to record the pulse at rest Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Suggested Checklist for Evaluation of Blood pressure at Rest

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner measures blood pressure (BP) by palpatory method as below:** 2. Stands on right side of the subject 3. Gives proper instructions to subject 4. Exposes arm 5. Ties the cuff of sphygmomanometer around arm of subject properly above cubital fossa in such a way that midpoint of cuff overlies the brachial artery 6. Checks that mercury column of the sphygmomanometer is at zero level. 7. Keeps the sphygmomanometer at level of heart 8. Palpates radial artery 9. Raises the mercury column in the sphygmomanometer by raising pressure in cuff 10. Notes down the level of mercury column for disappearance/reappearance of pulse. 11. Records systolic blood pressure (SBP) value by palpatory method			
III.	**Learner measures blood pressure by auscultatory method as below:** 12. Raises the mercury column 20–30 mm Hg above SBP value recorded by palpatory method 13. Places the diaphragm of stethoscope medial to tendon of biceps over brachial artery 14. Slowly lowers the mercury column by releasing pressure in cuff at rate of 2–4 mm Hg per second and while decreasing pressure, auscultates for appearance, change in quality and disappearance of Korotkoff sounds 15. Notes down appearance of sounds as systolic and disappearance of sounds as diastolic blood pressure (DBP) 16. Releases the pressure from cuff			
IV.	17. Thanks the subject			
V.	18. Reports the findings to examiner			
Total points scored by student (/18 points)				
Reduce score to 7 marks				

Scoring of Student for the Certification of Recording of Blood Pressure at Rest

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to record the blood pressure at rest Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Record Blood Pressure and Pulse in Different Grades of Exercise (PY5.12)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for Evaluation of Pulse and BP at different grades of exercise

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner records pulse and blood pressure at different grades of exercise as below:** 2. Stands on the right side of subject 3. Gives proper instructions to subject and asks the subject to sit down 4. Records pulse rate at the end of 5 minutes in sitting position 5. Exposes arm 6. Ties cuff of sphygmomanometer around arm of the subject properly above cubital fossa in such a way that midpoint of rubber bag of cuff overlies the brachial artery 7. Records BP by palpatory and auscultatory method 8. Does not remove cuff 9. Asks the subject to do either running/spot jogging/cycling for 5 minutes (exercise) 10. Records the pulse rate immediately after exercise 11. Records the BP immediately after exercise by auscultatory method 12. Records the pulse rate followed by BP after 2 minutes of stoppage of exercise. 13. Repeats the same after 5 and 10 minutes of stoppage of exercise			
III.	14. Thanks the subject			
IV.	15. Reports the findings to examiner			
Total points scored by student (/15 points)				
Reduce score to 7 marks				

Scoring of Student for the Certification of Recording of Blood Pressure and Pulse at Different Grades of Exercise

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to record the blood pressure and pulse at different grades of exercise. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Record Blood Pressure and Pulse at Various Postures (PY5.12)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of pulse and blood pressure at various postures

Sl. no.	*Assessment criteria*	*Date of assessment* *Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner records pulse and blood pressure at various postures as below:** 2. Stands on the right side of subject 3. Gives proper instructions to subject and asks the subject to lie down on a couch for 5 minutes 4. Records pulse rate at the end of 5 minutes in supine position 5. Exposes arm 6. Ties cuff of sphygmomanometer around arm of subject properly above cubital fossa in such a way that midpoint of rubber bag of cuff overlies the brachial artery 7. Records BP by palpatory and auscultatory method 8. Does not remove cuff 9. Asks the subject to stand immediately after 5 minutes of supine position 10. Records the BP immediately after standing within 30 seconds by auscultatory method 11. Records the pulse rate immediately 12. Repeats taking BP followed by pulse rate after 2, 5 minutes of standing			
III.	13. Thanks the subject			
IV.	14. Reports the findings to examiner			
Total marks scored by student (/14 points)				
Condense score to 7 marks				

Scoring of Student for the Certification of Recording of Blood Pressure and Pulse at Various Postures

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to record the blood pressure and pulse at various postures. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Clinical Examination of Respiratory System

Number of procedures that require certification: 01 (PY6.9)

Number of times the skill needs to be done to be certified for performance: 01

1. **Competency identified:** PY6.9		
2. Teaching learning sessions a. DOAP session b. Skill certification Session		
3. Activities attended/performed	**Date**	**Faculty Name and sign**
a. *DOAP session:* Learner performs clinical examination of respiratory system as per the procedure demonstrated		
b. *Skill assessment session:* Practical performance and viva voce using checklist for Certification		
c. Others:		
d. Others:		
4. **Criteria required for completion** a. Attending DOAP session b. Documenting in Practical Record Book c. *Skill assessment:* Practical performance and viva voce using checklist d. Others:	 Yes/No Yes/No Yes/No	
5. **Assessment** a. *Scoring:* May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others:		
6. Documentation required a. Documented in Practical Record Book b. Checklist used for certification c. Others:		
7. Others: Instruments required: Stethoscope, measuring tape		

Practical: Clinical Examination of the Respiratory System (PY 6.9)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of clinical examination of respiratory system

Sl. no.	*Assessment criteria*	*Date of assessment* *Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	2. Gives proper instructions to subject, asks the subject to remove shirt and sit under good light			
III.	**Learner does inspection of chest wall as below:** Observes the anterior chest wall and reports under following headings. 3. Shape of chest 4. Symmetry of chest 5. Respiratory movements of chest 6. Respiratory rate 7. Respiratory rhythm 8. Type of respiration 9. Use of accessory muscles of respiration 10. Venous pulses in neck 11. Apical impulse 12. Position of trachea 13. Spine (any deformities) posteriorly			
IV.	**Learner performs palpation of the respiratory system as below:**			
	a. **Determines the position of trachea** 14. Places index and ring fingers of right hand on sternoclavicular joints on either side 15. Places the middle finger in suprasternal notch 16. Gently pushes middle finger forward to feel the tracheal rings. 17. Finds the space between sternocleidomastoid muscle and trachea by insulating finger between trachea and sternocleidomastoid muscle. 18. Notes down the observations			
	b. **Determines the position of apical beat** 19. Asks the subject to lie down 20. Places palm on precordium to feel the pulsation			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	21. Narrows down the pulsation using ulnar border of hand 22. Points out location of apical impulse using index finger 23. Determines the position of apex beat with respect to midclavicular line 24. Determines the position of apex beat with respect to intercostal space by counting down from sternal angle 25. Notes down the observations			
	c. **Measures expansion of chest in upper, middle and lower zones** 26. Places both the palms firmly on either side of rib cage with thumbs opposing the midline in upper zone (supramammary) of anterior chest wall. 27. Asks the subject to take deep breaths			
	28. Observes for the anteroposterior movement of palms. 29. Notes down the observations 30. Places both the palms on either sides of the rib cage firmly with thumbs opposing in the midline in mammary and inframammary regions of anterior chest wall. Asks the subject to take deep breaths, observes for lateral movement of thumbs during each breath 31. Notes down the observations.			
	d. **Measures expansion of chest in apical zone** 32. Stands behind the subject 33. Places both hands on shoulders with thumbs approximated in midline. 34. Instructs subject to take deep breath 35. Observes for the up and down movements of thumb and knuckles. 36. Notes down the observations.			
	e. **Records tactile vocal fremitus (TVF)** in supraclavicular, supramammary, mammary, inframammary, axillary, infra-axillary, suprascapular, interscapular and infrascapular regions. 37. Places ulnar border of hand in the intercostal spaces of above mentioned regions. 38. Asks the subject to say ninety nine or one two three repeatedly in same intensity of voice. 39. Feels and compares the vibrations on the corresponding areas of opposite side. 40. Notes down the observations			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	f. **Examines for tenderness or swelling in chest regions** 41. Palpates any part of chest wall gently, which presents an obvious swelling or where the patient complains of pain.			
V.	**Learner performs percussion of the chest wall as below:**			
	a. **Chest wall percussion** 42. Places the middle finger of non-dominant (usually left) hand (pleximeter) firmly on the surface of area to be percussed 43. Strikes with tip of middle finger of dominant hand (usually right) (percussion finger) over the middle phalanx of pleximeter finger perpendicularly. 44. Movements done only by wrist joint and not at elbow joint. 45. Percusses corresponding areas of opposite side and compares. 46. Lifts the percussion finger immediately after the strike. 47. Percusses from high resonant to low resonant area 48. Percusses in all above mentioned areas. 49. Notes down the observations.			
	b. **Percusses the lower border of lungs (basal percussion)** 50. Percusses the anterior chest wall, on both the sides along the mid-clavicular line from above downwards till dull note heard. 51. Percusses the lateral chest wall, on both the sides along the mid-axillary line from above downwards till dull note heard. 52. Percusses the posterior chest wall, on both the sides along the mid-scapular line from above downwards till dull note heard. 53. Notes down the observations			
VI.	**Learner auscultates the respiratory system as below:**			
	a. **Auscultates for character and intensity of breath sounds** 54. Properly wears stethoscope with ear pieces facing forwards and medially. 55. Places diaphragm of stethoscope on regions mentioned above of both the sides on the corresponding areas from top to bottom. 56. Instructs subject to take slow and deep breaths by mouth 57. Listens to breath sounds carefully 58. Notes down the observations			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	b. **Auscultates for vocal resonance** 59. Instructs the subject to say one-one or ninety nine-ninety nine repeatedly with same tone. 60. Places diagram of stethoscope on regions mentioned above of both the sides on the corresponding areas from top to bottom. 61. Listens to sounds carefully 62. Notes down the observations. 63. Auscultates for adventitious/added sounds, if any			
VII.	64. Thanks the subject			
VIII.	65. Reports the findings to examiner			
Total points scored by the student (/64 points)				
Condense score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Respiratory System

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine the respiratory system Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Clinical Examination of Nervous System

Number of skills that require certification: 09

Number of times each skill needs to be done to be certified for performance: 01

1. **Competencies identified:** PY10.11 & PY10.20		
2. Teaching learning sessions a. DOAP session b. Skill certification session		
3. **Activities attended/performed**	**Date**	**Faculty name and sign**
a. *DOAP session:* Learner performs clinical examination of higher mental functions as per the procedure demonstrated		
b. *Skill assessment:* Practical performance and viva voce using checklist for certification of higher mental functions		
c. *DOAP session:* Learner performs clinical examination of sensory system as per the procedure demonstrated		
d. *Skill assessment:* Practical performance and viva voce using checklist for certification of sensory system		
e. *DOAP session:* Learner performs the clinical examination of motor system as per the procedure demonstrated		
f. *Skill assessment:* Practical performance and viva voce using checklist for certification of motor system		
g. *DOAP session:* Learner performs the clinical examination of reflexes as per the procedure demonstrated		
h. *Skill assessment:* Practical performance and viva voce using checklist for certification of reflexes		
i. *DOAP session:* Learner performs the clinical examination of cranial nerve I for smell as per the procedure demonstrated		
j. *DOAP session:* Learner performs the clinical examination of cranial nerve II for visual acuity, colour and field of vision as per the procedure demonstrated		
k. *DOAP session:* Learner performs the clinical examination of cranial nerves III, IV and VI for ocular movements, pupillary reflex as per the procedure demonstrated		
l. *DOAP session:* Learner performs the clinical examination of cranial nerve V as per the procedure demonstrated		

Contd.

m. *DOAP session:* Learner performs the clinical examination of cranial nerve VII for taste sensation and muscles of facial expression as per the procedure demonstrated		
n. *DOAP session:* Learner performs the clinical examination of cranial nerve VIII for hearing as per the procedure demonstrated		
o. *DOAP session:* Learner performs the clinical examination of cranial nerves IX, X, XI and XII as per the procedure demonstrated		
p. *Skill assessment:* Practical performance and viva voce using checklist for certification of cranial nerves I–XII.		
q. *Others:*		
r. *Others:*		
4. **Criteria required for completion** a. Attending all DOAP sessions b. Documenting the report in Practical Record Book c. Skill assessment: Practical performance using checklist and viva voce d. Others:	 Yes/No Yes/No Yes/No	
5. **Assessment** a. *Scoring*: May be planned as a part of regular assessment b. Rating as per the checklist used for certification c. Others:		
6. **Documentation required** a. Documented in Practical record book b. Checklist used for certification c. Others		

Practical: Clinical Examination of the Higher Mental Functions (PY10.11)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of clinical examination of higher mental functions

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, ask for his/her name, age and occupation			
II.	**Learner performs examination of mental state in given environment as below:** **Appearance and behavior** 2. Observes for appearance of subject like dress, grooming and personal hygiene. 3. Observes the way subject sits. 4. Observes the way subject walks 5. Observes for any abnormal movements 6. Observes for physical/verbal aggression 7. Observes for any inappropriate behavior **Emotional state** 8. Observes for facial expression of subject 9. Observes for abnormal emotions like depression, anxiety, irritability, anger and perplexity **Delusions and hallucinations** 10. Asks for any false beliefs which are not changed in spite of evidences 11. Asks for any visual, auditory and olfactory hallucinations **Orientation of time and place** 12. Asks about time, day, date, month and year 13. Asks about place (where you are present, which country, district or taluk?) **Level of consciousness** 14. Observes whether subject is awake and alert, stupor or in comatose position. **Intelligence and attention and calculation** 15. Asks for educational history 16. Asks the subject to subtract 7 from 100, and then repeat from result.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	17. Asks the subject to continue 5 times: 100 93 86 79 65 18. Asks the subject to alternative spell "WORLD" backwards: dlrow. 19. Asks the patient to copy a pair of intersecting pentagon			
III.	**Learner performs examination for memory in given environment as below:** **Short-term memory (registration)** 20. Names any three objects (e.g., apple, book, and pencil) and asks the subject to repeat it in correct order.			
	Short-term memory (recall) 21. Asks the subject for names of 3 objects learned earlier after 5 minutes. **Long-term memory** 22. Asks the subject to describe some important pubic events occurred in last month/year			
IV.	**Learner performs examination for speech and language in given environment as below:** 23. Asks the subject to correctly name any two familiar objects (e.g., pencil, watch) 24. Asks the subject to repeat "No ifs, ands, or buts". 25. Asks subject to read and obey a written command on a piece of paper stating "Close your eyes". 26. Asks the subject to write a sentence. 27. Assess form of speech and content of speech			
V.	28. Thanks the subject			
VI.	29. Reports the findings to examiner			
Total points scored by the student (/29 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Higher Mental Functions

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1	Psychomotor skills, communication skills and behavioral skills	07			
2	Knowledge level	03			
3	Total marks	10			

Scoring and Certification of Student Competency

Criteria	**Decision**	**Competent**
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine the higher mental functions of subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Motor System (PY10.11)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of clinical examination of motor system

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	2. Gives proper instructions to subject			
III.	**Learner measures bulk of muscle by palpation as below:** **Midarm circumference** 3. Detects the midpoint of the right arm of the subject by measuring (with the help of a measuring tape) the distance between the median olecranon process and the tip of the humerus. 4. Measures the midarm circumference with a measuring tape. 5. Measures the midarm circumference of the other (left) side and compares. 6. Compares the findings and reports **Mid-forearm circumference** 7. Detects the midpoint of the right forearm of the subject by measuring (with the help of a measuring tape) the distance between the olecranon process and the styloid process 8. Measures the mid-forearm circumference with a measuring tape. 9. Measures the mid-forearm circumference of the other (left) side and compares. 10. Compares the findings and reports **Mid-calf circumference** 11. Detects the widest part of calf 12. Measures the mid-calf circumference with a measuring tape. 13. Measures the mid-calf circumference of the other (left) side and compares. 14. Compares the findings and reports **Mid-thigh circumference** 15. Detects the midpoint between anterior superior iliac spine and patella with the help of measuring tape 16. Measures the mid-thigh circumference with a measuring tape. 17. Measures the mid-thigh circumference of the other (left) side and compares. 18. Compares the findings and reports			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
IV.	**Learner records tone of muscle of upper limb and lower limb as below:** 19. Explains the procedure to the subject 20. Makes the subject comfortable and relax 21. Makes passive movement at their various joints like elbow and wrist joint in upper limb and knee and ankle joint of lower limb and feels for the resistance offered by moving muscle 22. Compares the muscle tone in the similar fashion on the opposite side for the individual muscle. 23. Reports the findings.			
V.	**Learner grades the power of muscle of upper and lower limbs as below:** 24. Explains the test procedure to the subject. 25. Asks the subject to perform a movement of particular muscle/group of muscle while he/she applies resistance to that movement. 26. Compares the movement/strength of each muscle on the opposite side or with his owns muscle strength. 27. Grades the power of particular muscle/group of muscle of upper limb and reports 28. Grades the power of particular muscle/group of muscle of lower limb and reports			
VI.	**Learner examines for coordination of movements of upper and lower limbs as below:** **Upper limb** **a. Finger: Nose test** 29. Gives proper instructions to subject 30. Asks subject to be comfortably seated 31. Asks the subject to touch the tips of the, nose with tip of index finger, rapidly and repeatedly first with eyes open and then with eyes closed. 32. Asks to repeat with other hand 33. Observes and reports the findings. **b. Making a circle** 34. Gives proper instructions to subject 35. Asks subject to be comfortably seated 36. Asks the subject to make a circle with index finger, rapidly and repeatedly first with eyes open and then with eyes closed. 37. Asks to repeat with other hand 38. Observes and reports the findings.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	c. Rapid alternate movements 39. Gives proper instructions to subject 40. Asks subject to be comfortably seated 41. Asks the subject to make rapid alternate movements like rapid supination and pronation, rapidly and repeatedly first with eyes open and then with eyes closed. 42. Asks to repeat with other hand 43. Observes and reports the findings. **Lower limb** **a. Knee-heel test** 44. Gives proper instructions to subject 45. Asks subject to be in supine position 46. Asks the subject to place heel on opposite knee and slide heel down the shin towards ankle, rapidly and repeatedly 47. Asks to repeat with other leg 48. Observes and reports the findings.			
	b. Making a circle 49. Gives proper instructions to subject 50. Asks the subject to draw circle with toes in air 51. Observes and reports the findings.			
	c. Walk in a straight line 52. Asks the subject to walk on a straight line 53. Observes and reports the findings.			
VII.	**Learner assesses the gait in given environment as below:** 54. Gives proper instructions to subject 55. Asks the subject to walk for a distance, turn around and come back 56. Observes and reports the findings			
VIII.	**57. Observes for presence of any abnormal involuntary movements during rest or performing action**			
IX.	58. Thanks the subject			
X.	59. Reports the findings to examiner			
Total score of student (/59 points)				
Condense score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Motor System

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine the motor system of given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Sensory System (PY10.11)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of clinical examination of sensory system

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	2. Gives proper instructions to subject. 3. instructs the subject to close eyes 4. Asks the subject to say "yes" whenever he/she feels the sensation.			
III.	**Learner performs the examination of tactile sensibility in both upper and lower limbs in given environment as below:** I. **Fine touch** 5. Instructs the subject to close eyes 6. Asks the subject to say "yes" whenever he/she feels the touch sensation. 7. Lightly touches the various dermatomal area of upper limb with the cotton wool. 8. Elicits touch sensation of corresponding area on opposite side. 9. Compares the findings and reports 10. Repeats the above steps in lower limb			
	II. **Crude touch/pressure** 11. Instructs the subject to close eyes 12. Asks the subject to say "yes" whenever he/she feels the touch sensation. 13. Applies pressure on various dermatomal area of upper limb with blunt end of pencil. 14. Elicits pressure sensation of corresponding area on opposite side. 15. Compares the findings and reports. 16. Repeats the above steps in lower limb			
	III. **Tactile localization** 16. Instructs the subject to close eyes 17. Touches the various dermatomal areas of upper limb with the help of blunt end of pencil 18. Asks the subject to locate exactly the point of touch with eyes open 19. Measures the difference between two points (localization distance) 20. Compare the findings and reports 21. Repeats the steps in lower limb			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	IV. **Two-point discrimination** 22. Instructs the subject to say whether he/she feels the touch of one point or two points when touched by compass aesthesiometer 23. Instructs the subject to close eyes 24. Separates the two limbs of compass aesthesiometer slightly and touches the skin with two points simultaneously. 25. Repeats till subject feels two separate touch points 26. Notes down the Minimum separable distance in fingertips 27. Repeats the above steps in forearm, face, back and sole and measures minimum separable distance			
	V. **Stereognosis** 28. Instructs the subject to identify the object by just palpating it. 29. Instructs the subject to close the eyes			
	30. Places familiar objects in one hand of subject and ask him/her to identify. 31. Repeats with four or five different familiar objects.			
IV.	**Learner performs the examination of superficial pain in both upper and lower limbs on both the sides in given environment as below:** I. **Superficial pain** 32. Instructs the subject to say yes when he/she feels the sensation of pain 33. Instructs the subject to close eyes 34. Pricks the skin on upper limb with the help of pin/needle 35. Elicits pain sensation of corresponding area on opposite side 36. Compares the findings and reports 37. Repeats above steps in lower limb			
V.	**Learner performs examination of temperature in both upper and lower limbs in given environment as below:** 38. Instructs the subject to say yes when he/she feels the sensation of cold or warm 39. Instructs the subject to close eyes 40. Touches the various dermatomal area of the upper limb alternatively with the help of test tubes containing hot or cold water 41. Elicits temperature sensation on the corresponding areas of opposite side 42. Compares and reports 43. Repeats the above steps in lower limb.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
VI.	**Learner performs the examination of position and joint movement in both upper and lower limbs in given environment as below:** I. **Position sense** 44. Instructs the subject to imitate the movement done in one hand/leg with the opposite. 45. Moves his/her hand/leg up or down. 46. Notes down observations and reports II. **Joint sense** 47. Instructs the subject to recognize the movement (up or down) 48. Holds the terminal phalanx of thumb/great toe and does flexion or extension. 49. Notes down the observations and reports III. **Romberg sign** 50. Instructs the subject to stand straight with feet close together and then to close the eyes. 51. Observes for swaying and reports			
VII.	**Learner performs the examination of vibration sense in both upper and lower limbs in given environment as below:** 52. Instructs the subject to say yes when he/she feels the vibration sense. 53. Sets the tuning fork to vibrate (128 Hz) 54. Places the base of vibrating tuning fork on styloid process in upper limb/medial malleolus in lower limb 55. Notes down the observations and reports.			
VIII.	56. Thanks the subject			
IX.	57. Reports the findings to examiner			
Total points scored by student (/57 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Sensory System

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	**Decision**	**Competent**
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to Clinically examine the Sensory system of given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Reflexes (PY10.11)

Number of times skill needs to be done to be certified as competent: 01

Suggested checklist for evaluation of clinical examination of reflex

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	2. Gives proper instructions to subject. 3. Reassures that knee hammer is harmless instrument.			
III.	**Learner performs superficial reflexes in given environment as below:** **Plantar reflex:** 4. Asks the subject to lie down with foot wear removed 5. Asks the subject to relax completely 6. With a blunt object strikes the sole, from heel along the lateral border of foot and medially along metatarsus towards great toe. 7. Observes and reports the finding (flexor response/Babinski's sign) 8. Elicits the reflex on opposite side. **Abdominal reflex**: 9. Asks the subject to lie down with footwear removed 10. With the help of a key, strokes parallel to costal margin on both below and above naval region 11. Observes and reports the findings.			
IV.	**Learner performs deep tendon reflexes in given environment as below:** **Biceps jerk:** 12. Asks the subject to sit down and relax completely 13. Places subject's forearm in semiflexed position supported by his/her forearm in relaxed state. 14. Places thumb on the tendon of biceps in cubital fossa. 15. Taps on thumb with the help of knee hammer. 16. Observes and reports the findings 17. Elicits the jerk on opposite side and compares			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	Triceps jerk: 18. Asks the subject to sit down and relax completely 19. Supports the forearm of subject on his/her arm at right angles 20. Strikes the tendon of triceps just above olecranon. 21. Observes and reports the findings 22. Elicits the jerk on opposite side and compares			
	Supinator jerk: 23. Asks the subject to sit down and relax completely 24. Holds the hand of subject and laterally bends in opposite direction 25. Strikes the radius 1–2 inches above wrist over styloid process. 26. Observes and reports the findings 27. Elicits the jerk on opposite side and compares			
	Knee jerk: *Sitting position:* 28. Asks the subject to sit on edge of chair with legs dangling and not touching the ground/ legs crossed. 29. Exposes the knee of the examining lower limb 30. Strikes on the patellar tendon just above tibial tuberosity with knee hammer. 31. Observes for the contraction of quadriceps and extension of knee and reports the findings 32. Elicits the reflex on opposite side and compares			
	Lying down position: 33. Asks the subject to lie down 34. The student passes the hand underneath the testing limb, rests the hand on the opposite limb and the limb to be tested is slightly raised 35. Strikes the patellar tendon with knee hammer. 36. Observes and reports (contraction of quadriceps and extension of knee) 37. Elicits the reflex on opposite side and compares			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	Ankle jerk: *Kneeling position:* 38. Asks the subject to kneel on the chair 39. Slightly dorsiflexes the foot 40. Strikes the tendo-Achillis with knee hammer 41. Observes and reports the findings (contraction of calf muscle and plantar flexion of foot) 42. Elicits the reflex on opposite side and compares			
	Supine position: 43. Makes the subject lie down. 44. Slightly dorsiflexes the foot by holding the big toe gently 45. Strikes tendo Achillis with knee hammer 46. Observes and reports (contraction of calf muscle and plantar flexion of foot) 47. Elicits on opposite side and compares.			
	Jaw jerk: 48. Asks the subject to sit down and relax 49. Asks the subject to partially open the mouth 50. Places a finger firmly on chin 51. Taps over the finger with the help of knee hammer 52. Observes and reports the findings (contraction of elevators of jaw and closure of mouth)			
V.	53. Thanks the subject			
VI.	54. Reports the findings to examiner			
Total points student scored (/54 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Reflexes

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine the reflexes in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve I—Olfactory Nerve (PY10.11)

Demonstration of Smell (PY10.20)

Suggested checklist for evaluation of clinical examination of cranial nerve I

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation 2. Gives proper instruction to subject			
II.	**Learner examines for smell in given environment as below:** 3. Asks the subject to sit comfortably on a stool 4. Makes sure that both the nostrils are patent 5. Makes sure that subject is familiar with the odors used for test 6. Asks the subject whether he/she have any olfactory hallucination. 7. Asks the subject to close eyes and one of nostril 8. Takes the bottle of clove oil/peppermint oil/coffee powder (or any familiar odor substance) near to open nostril 9. Asks the subject whether he/she correctly perceives the smell 10. Notes down the observations 11. Repeats the procedure with the other nostril 12. Compares on the opposite nostril.			
III.	13. Thanks the subject			
IV.	14. Reports the findings to examiner			
Total points scored by student (/14 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve I

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve I in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve II—Optic Nerve (PY10.11) and Clinical Testing of Visual Acuity, Color and Field of Vision (PY10.20)

Suggested checklist for evaluation of clinical examination of cranial nerve II

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learners examine for visual acquity in a given environment as below:** **Far vision** 2. Gives proper instructions to subject. 3. Asks the subject to sit comfortably on stool at a distance of 6 meters from the Snellen's chart. 4. Stands on right side of subject. 5. Asks the subject to close the one of the eye. 6. Asks the subject to read the chart from top to bottom with the open eye. 7. Observes the line upto which subject is able to read comfortably. 8. Notes down the visual acuity for that eye. 9. Repeats the procedure with the other eye. 10. Notes down the observations and reports the findings. **Near vision** 11. Gives proper instructions to subject. 12. Asks the subject to sit comfortably on stool. 13. Holds Jaeger's chart at a distance of 10–12 inches (25 cm) from the subject's eyes. 14. Asks the subject to close the one of the eye. 15. Asks the subject to read the chart from top to bottom with the open eye. 16. Notes down the line up to which the subject is able to read comfortably. 17. Repeats the procedure with the other eye. 18. Notes down the observations and reports the findings.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
III.	**Learner examines for field of vision using finger confrontation test in a given environment as below:** 19. Gives proper instruction to the subject 20. Makes the subject sit comfortably on a stool 21. Sits at a distance of about 3 feet from the subject taking care that his/her eye level remains at the eye level of the subject. 22. Asks the subject to fix the gaze at tip of his/her nose and instructs the subject to say "yes" when , sees the tip of finger in the field of vision. 23. Asks the subject to close one of the eyes and close his/her opposite eye. 24. Moves finger midway between him/her and the subject from the periphery to the center of four quadrants (temporal, nasal, upper and lower) to check the field of vision. 25. Compares the field of vision of the subject with his/her own field of vision. 26. Repeats the procedure with the other eye 27. Notes down the observations and reports the findings			
IV.	**Learner examines for color vision in given environment as below:** 28. Gives proper instructions to subject. 29. Asks the subject to sit comfortably on stool. 30. Holds Ishihara's chart at a distance of 25 cm from the subject's eyes.			
	31. Asks the subject to read the number or trace the lines in each plate of the chart in maximum 10 seconds. 32. Notes if the subject is able to read the plate accurately. 33. Notes down the observations and reports the findings.			
V.	34. Thanks the subject			
VI.	35. Reports the findings to examiner			
Total points scored by student (/35 points)				
Condense to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve II

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve II in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerves III, IV and VI—Oculomotor, Trochlear and Abducent Cranial Nerves (PY10.11)

Suggested checklist for evaluation of clinical examination of cranial nerves III, IV and VI

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	2. Instructs the subject to sit comfortably on a stool. 3. Observes for the presence of ptosis, squint and nystagmus in any of eyes or in both.			
III.	**Learner examines for conjugated ocular movements in given environment as below:** 4. Instructs the subject to sit comfortably on a stool. 5. Sits at the same eye level in front of subject 6. Instructs the subject to look at the tip of the finger and follow the movement of the finger only by eyeball not by moving head. 7. Brings the tip of his index finger to the eye level of the subject keeping a distance of 25 cm from the subject's eye. 8. Moves the finger laterally to the right of subject (tests lateral rectus of right eye and medial rectus of left eye) 9. From that point, moves the finger vertically upwards (tests superior rectus of right eye and inferior oblique of left eye) 10. Then moves the finger downwards (tests inferior rectus of right eye and superior oblique of left eye) 11. Repeats the above steps by moving the finger laterally to left of subject. 12. Observes for various eyeball movements and reports the findings.			
IV.	**Learner examines for direct and consensual papillary light reflex in given environment as below:** 13. Makes the subject sit comfortably on a stool 14. Explains test to subject and gives proper instruction to the subject 15. Instructs the subject to hold one of hand in between two eyes 16. Switches on torch and bring torch light from side of subject			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	17. Focuses the torch light into one of eyes 18. Observes for the reaction of pupil of that eye (direct light reflex) 19. Observes for the reaction of pupil of opposite eye (consensual light reflex) 20. Notes down the observations and reports the findings			
V.	**Learner examines for accommodation reflex in given environment as below:** 21. Makes the subject sit comfortably on a stool 22. Explains test to subject and gives proper instruction to the subject 23. Asks the subject to look at a distant object 24. Suddenly brings the index finger in between two eyes close to subject's nose. 25. Asks the subject to look at the finger 26. Notes down the observations and reports the findings.			
VI.	27. Thanks the subject			
VII.	28. Reports the findings to examiner			
Total points scored by student (/28 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerves III, IV and VI

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	**Decision**	**Competent**
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerves III, IV and VI in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve V—Trigeminal Nerve (PY10.11)

Suggested checklist for evaluation of clinical examination of cranial nerve V

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for sensory functions of trigeminal nerve in given volunteer/simulated patient as below:** **Light touch** 2. Instructs the subject to sit comfortably on a stool. 3. Stands on right side of subject 4. Instructs the subject to close eyes 5. Asks the subject to say "yes" whenever he/she feels the touch sensation. 6. Lightly touches the skin of face in ophthalmic region with the help of cotton wool. 7. Performs the above steps in corresponding region of opposite side of face. 8. Repeats the steps in maxillary and mandibular regions of face. 9. Notes down observations and reports the findings.			
	Pressure 10. Instructs the subject to sit comfortably on a stool. 11. Stands on right side of subject 12. Instructs the subject to close eyes 13. Asks the subject to say "yes" whenever he/she feels the touch sensation. 14. Applies pressure the skin of face in ophthalmic region with the help of blunt end of pencil. 15. Performs the above steps in corresponding region of opposite side of face. 16. Repeats the steps in maxillary and mandibular regions of face. 17. Notes down observations and reports the findings.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	Tactile localization 18. Instructs the subject to close eyes 19. Touches the skin of face in ophthalmic region with the help of blunt end of pencil 20. Asks the subject to locate exactly the point of touch with eyes open 21. Measures the difference between two points (localization distance) 22. Performs the above steps in corresponding region of opposite side of face 23. Repeats the steps in maxillary and mandibular regions of face 24. Notes down the observations and reports the findings			
	Two-point discrimination 25. Instructs the subject to say whether he/she feels the touch of one point or two points when touched by compass aesthesiometer 26. Instructs the subject to close eyes 27. Separates the two limbs of compass aesthesiometer slightly and touches the skin in ophthalmic region with two points simultaneously 28. Repeats till subject feels two separate touch points 29. Notes down the minimum separable distance in the above mentioned areas 30. Repeats on the corresponding region of opposite side 31. Repeats the above steps in maxillary and mandibular regions 32. Compares the observations and reports the findings			
	Superficial pain 33. Instructs the subject to say yes when he/she feels the sensation of pain 34. Instructs the subject to close eyes 35. Pricks the skin on ophthalmic region with the help of pin/needle 36. Notes down the observations			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	37. Repeats on the corresponding region of opposite side. 38. Repeats the above steps in maxillary and mandibular regions. 39. Compares the observations and reports the findings			
	Temperature 40. Instructs the subject to say yes when he/she feels the sensation of cold or warm 41. Instructs the subject to close eyes 42. Touches the skin on ophthalmic region alternatively with the help of test tubes containing hot or cold water 43. Notes down the observations 44. Repeats on the corresponding region of opposite side. 45. Repeats the above steps in maxillary and mandibular regions. 46. Compares the observations and reports the findings			
III.	**Learner examines for motor functions of trigeminal nerve in given volunteer/simulated patient as below:** 47. Gives proper instructions to subject and explain the nature of examination 48. Asks the subject to sit comfortably on stool 49. Observes the muscles of mastication for any wasting 50. Asks the subject to clench the teeth and palpates the prominence of temporalis and masseter on both sides (temple and upper part of cheek) 51. Asks the subject to open mouth and observes for any jaw deviation 52. Asks the subject to move the jaw from side-to-side against resistance and observes for any weakness of pterygoid muscles			
IV	**Learner examines for corneal reflex in given volunteer/simulated patient as below:** 53. Asks the subject to look straight 54. Brings a cotton wisp from the side and touches the cornea of one eye at the limbus gently 55. Observes the response (blinking) 56. Repeats the above steps in other eye			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
V.	**Learner examines for conjunctival reflex in given volunteer/simulated patient as below:** 57. Asks the subject to look straight 58. Brings a cotton wisp from the side and touches the conjunctiva of one eye gently 59. Observes the response (blinking) 60. Repeats the above steps in other eye.			
VI.	**Learner examines for jaw jerk in given volunteer/simulated patient as below:** 61. Asks the subject to partially open the mouth. 62. Places the forefinger in the midline between lower lip and chin. 63. Lightly taps the finger with the narrow end of knee hammer. 64. Observes the response (contraction of the masseters or jaw closure)			
VII.	65. Thanks the subject			
VIII.	66. Reports the findings to examiner			
Total points scored by the student (/66 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve V

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve V in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve VII— Facial Nerve (PY10.11) and Demonstration of Taste Sensation (PY10.20)

Suggested checklist for evaluation of clinical examination of cranial nerve VII

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for sensory functions of facial nerve in given volunteer/simulated patient as below:** **Taste sensation in anterior two-thirds of tongue** 2. Gives proper instructions to subject and explains the nature of examination 3. Instructs the subject to sit comfortably on a stool 4. Stands on right side of subject 5. Keeps the labeled solution of sugar (sweet sensation), salt (salt sensation), lemon (sour sensation) and paracetamol (bitter sensation) with labeled chart 6. Instructs the subject to close the eyes and not to speak 7. Asks the subject to protrude the tongue 8. Dips the glass rod in sweet solution (solution of sugar) and places on anterior two-thirds of tongue on one side 9. Asks the subject to open the eyes and identify the taste sensation by pointing on the appropriate taste sensation on chart without taking the tongue inside the mouth 10. Asks the subject to rinse the mouth 11. Repeats the procedure on other side 12. Repeats the procedure with salty, sour and bitter solutions 13. Uses different rods for different solutions 14. Tests the bitter sensation last 15. Notes down the observations and reports the findings			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
III.	**Learner examines for motor functions of facial nerve in given volunteer/simulated patient as below:** 16. Gives proper instructions to subject and explain the nature of examination 17. Asks the subject to sit comfortably on stool 18. Stands on right side of subject 19. Instructs the subject to frown or raise eyebrows and observes for wrinkles on forehead (to test frontal belly of occipitofrontalis) 20. Instructs the subject to close eyes as tightly as possible and tries to open the subject's eyes (to test for orbicularis oculi) 21. Instructs the subject to inflate mouth with air and blow out the cheeks and taps with finger on each inflated cheek (to test for buccinator muscle) 22. Instructs the subject to show his teeth and observes for deviation of angle of mouth (to test for orbicularis oris) 23. Instructs the subject to whistle (to test for both orbicularis oris and buccinator) 24. Instructs the subject to clench teeth and observes for prominence of platysma muscle in neck 25. Notes down the observations and reports the findings.			
IV.	26. Thanks the subject			
V.	27. Reports the findings to examiner			
Total points scored by student (/27 points)				
Condense score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve VII

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7– 9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve VII in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve VIII—Vestibulocochlear (PY10.11) and Demonstration of Hearing Tests (PY10.20)

Suggested checklist for evaluation of clinical examination of cranial nerve VIII

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner performs hearing tests in given volunteer/simulated environment as below:** **Watch test** 2. Gives proper instructions to subject and explain the nature of examination 3. Instructs the subject to sit comfortably on stool 4. Asks the subject to close the eyes 5. Asks the subject to plug one ear with finger 6. Slowly brings a watch from a distance towards open ear 7. Asks the subject when the ticking sound is heard 8. Notes the distance at which sound is heard 9. Repeats the test in the other ear 10. Compares the results with normal subject			
	Rinne's test 11. Instructs the subject, to raise hand when hearing of sound stops 12. Takes tuning fork of 256 or 512 Hz 13. Holds tuning fork stem between thumb and index finger without touching blades 14. Strikes the tuning fork and set it to vibrate 15. Immediately places the base of vibrating tuning fork on the mastoid process of one side 16. Asks the subject to raise hand when the subject stops hearing the sound 17. Once the subject stops hearing, brings the tuning fork blades very close to external auditory meatus of that side 18. Asks the subject whether he/she hears the sound 19. Asks the subject to raise hand when the subject stops hearing the sound			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
	20. Compares the observations (AC > BC or AC < BC) and reports the findings 21. Repeats the above steps on the other ear			
	Weber's test 22. Instructs the subject, to say whether or they hearing sound on one side or equally on both sides 23. Takes tuning fork of 256 or 512 Hz 24. Holds tuning fork stem between thumb and index finger without touching its blades 25. Strikes the tuning fork blades and sets it to vibrate 26. Immediately places the base of vibrating tuning fork on the forehead/vertex of skull of subject 27. Asks the subject whether he/she hears equally on both sides or on one side 28. Records the observation (equally heard on both sides/lateralization of sound) and reports the findings.			
	Schwabach test 29. Instructs the subject to raise hand when hearing of sound stops 30. Takes tuning fork of 256 or 512 Hz 31. Holds tuning fork stem between thumb and index finger without touching its blades			
	32. Strikes the tuning fork and set it to vibrate 33. Immediately places the base of vibrating tuning fork on the mastoid process of one side 34. Asks the subject to raise hand when the subject stops hearing the sound 35. Once the subject stops hearing, he/she places the base of the tuning fork on his/her own mastoid process 36. Compares the observations (BC of subject with the BC of examiner) and reports the findings			
III.	37. Thanks the subject			
IV.	38. Report the findings to examiner			
Total points scored by student (/38 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve VIII

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve VIII in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve IX—Glossopharyngeal Nerve (PY10.11) and Demonstration of Taste Sensation (PY10.11)

Suggested checklist for evaluation of clinical examination of cranial nerve IX

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for sensory functions of glossopharyngeal nerve in given volunteer/simulated patient as below:** **Taste sensation in posterior one-third of tongue** 2. Gives proper instructions to subject and explains the nature of examination 3. Instructs the subject to sit comfortably on a stool 4. Stands on right side of subject 5. Keeps the labeled solution of sugar (sweet sensation), salt (salt sensation, lemon (sour sensation) and paracetamol (bitter sensation) with labeled chart. 6. Instructs the subject to close the eyes and to not speak 7. Asks the subject to protrude the tongue 8. Dips the glass rod in sweet solution (solution of sugar) and places on posterior one-third of tongue on one side 9. Asks the subject to open the eyes and identify the taste sensation by pointing on the appropriate taste sensation on chart without taking the tongue inside the mouth 10. Asks the subject to rinse the mouth 11. Repeats the procedure on other side 12. Repeats the procedure with salty, sour and bitter solutions 13. Uses different rods for different solutions 14. Tests the bitter sensation last 15. Notes down the observations and reports the findings.			

Contd.

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
III.	**Learner examines for motor functions of glossopharyngeal nerve in given volunteer/simulated patient as below:** 16. Gives proper instructions to subject and explains the nature of examination 17. Instructs the subject to sit comfortably on stool 18. Asks the subject to open the mouth wide 19. Tickles the posterior wall of the pharynx with swab stick for few seconds 20. Observes the contraction of the posterior pharyngeal wall (palatal reflex) 21. Notes down the observation and reports the findings			
IV.	22. Thanks the subject			
V.	23. Reports the findings to examiner			
Total points scored by student (/23 points)				
Condense score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve IX

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve IX in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve X—Vagus Nerve (PY10.11)

Suggested checklist for evaluation of clinical examination of cranial nerve X

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for pharyngeal and palatal functions of vagus nerve in given volunteer/ simulated patient as below:** 2. Asks for history of regurgitation of fluids through the nose during swallowing 3. Observes for palatal dysarthria (difficulty in pronunciation of words) 4. Instructs the subject to swallow water and observes (swallowing test) 5. Asks the subject to open mouth wide open and say "AAAH" and observes for upward movement of arch of palate on both sides (aaah test) 6. Asks the subject to puff out their cheeks with the lips tightly closed and listens for air escaping from nose **Palatal reflex** 7. Gives proper instructions to subject and explains the nature of examination 8. Instructs the subject to sit comfortably on stool 9. Asks the subject to open the mouth wide 10. Tickles the posterior wall of the pharynx with swab stick for few seconds 11. Observes the contraction of the posterior pharyngeal wall (palatal reflex) 12. Notes down the observation and reports the findings			
III.	**Learner examines for laryngeal functions of vagus nerve in given volunteer/simulated patient as below:** 13. Observes for dysphonia 14. Asks the subject to cough and assesses the strength of cough			
IV.	15. Thanks the subject			
V.	16. Reports the findings to examiner			
Total points scored by student (/16 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve X

Sl No.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve X in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial nerve XI— Spinal Accessory Nerve (PY10.11)

Suggested checklist for evaluation of clinical examination of cranial nerve XI

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for motor functions of accessory nerve in given volunteer/ simulated environment as below:** 2. Stands behind the subject and observes for atrophy of trapezius muscle 3. Faces the subject and observes for the atrophy of sternocleidomastoid muscle **Power of trapezius muscle** 4. Gives proper instructions to subject and explains the nature of examination 5. Stands behind the subject 6. Places both hands on both sides of shoulder 7. Asks the subject to shrug the shoulders against resistance **Power of sternocleidomastoid muscle** 8. Gives proper instructions to subject and explains the nature of examination 9. Places one hand on the left chin and applies resistance 10. Asks the subject to turn the head to left side 11. Inspects the right sternocleidomastoid for prominence 12. Repeats the procedure on the other side 13. Notes down the observations and reports the findings **Power of sternocleidomastoid muscle simultaneously** 14. Gives proper instructions to subject and explains the nature of examination 15. Places palm on the forehead of subject and applies resistance 16. Asks the subject to flex the neck 17. Inspects the prominence of sternocleidomastoid muscle on both sides. 18. Notes down the observations and reports the findings			
III.	19. Thanks the subject			
IV.	20. Reports the findings to examiner			
Total points scored by (/20 points)				
Condense the score to 7 marks				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve XI

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
< 7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
> 9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve XI in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification:

Practical: Clinical Examination of the Cranial Nerve XII—Hypoglossal Nerve (PY10.11)

Suggested checklist for evaluation of cranial nerve XII

Sl. no.	*Assessment criteria*	*Date of assessment Mark 'Yes/No'*		
I.	1. Student greets the subject, asks for his/her name, age and occupation			
II.	**Learner examines for motor functions of hypoglossal nerve in given volunteer/ simulated patient as below:** 2. Gives proper instructions to subject and explains the nature of examination 3. Asks the subject to sit comfortably on stool 4. Asks the subject to protrude the tongue and observes for any atrophy, fasciculations or tremors present. 5. Asks the subject to protrude the tongue and looks for any deviation 6. Asks the subject to move the tongue from side-to-side 7. Asks the subject to move the tongue from side-to-side inside the mouth while applying resistance on the cheeks from outside. 8. Observes for speech 9. Asks the subject to swallow water and observes for any difficulties			
III.	10. Thanks the subject			
IV.	11. Reports the findings to examiner			
Total points scored by student (/11 points)				
Condense the score to 7				

Scoring of Student for the Certification of Clinical Examination of Cranial Nerve XII

Sl. no.	*Domains assessed*	*Maximum marks*	*Actual marks scored*		
			Attempt I	*Attempt II*	*Attempt III*
1.	Psychomotor skills, communication skills and behavioral skills	07			
2.	Knowledge level	03			
3.	Total marks	10			

Scoring and Certification of Student Competency

Criteria	*Decision*	*Competent*
<7 total marks	Below expectations	Needs remedial
7–9 total marks	Meets expectations	Competent
>9 total marks	Exceeds expectations	Competent

Feedback to student and actions taken:
It is hereby certified that student is competent to clinically examine for cranial nerve XII in the given subject. Name and Signature of Evaluator: Name and Signature of Student: Date of Certification: