



**Dental College, HITEC-IMS**  
**Dental Education Department**  
**Institutional Assessment Policy**

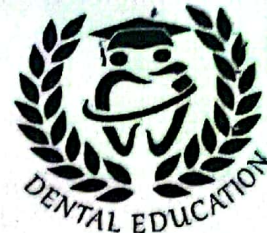


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**B. Preamble**

The planning and management of the assessment policy is the responsibility of the Dental Education department. The policy is prepared in compliance with the standards given by the National University of Medical Sciences (NUMS) and the Pakistan Medical Commission (PMC). Please refer to Annexure I for NUMS Assessment Policy.

**C. Definitions**

- I. **Assessment:** Any systematic method of obtaining information from tests and other sources, used to draw inferences about characteristics of students and of the BDS program at Dental College, HITEC-IMS.
- II. **Academic Council:** the Academic Council of the Dental college HITEC-IMS.
- III. **Internal Assessment:** Assessment of student learning done continuously throughout the academic year.
- IV. **Formative Assessment:** A component of internal assessment that is done to identify deficiencies in student learning, provide feedback and modify instruction if required. If these are scored, their marks are not carried forwards toward the final scores.
- V. **Summative Assessment:** Component of internal assessment, scores of which will contribute to the aggregate scores of the year. These include end-of-block and pre-annual exams.
- VI. **Assessment Blueprint:** Detailed table showing weightage assigned to assessment tools that are being used to assess the learning outcomes.
- VII. **Head Of The Institute:** The Principal of the Dental College, HITEC-IMS.
- VIII. **Department:** A teaching department maintained and administered by the Dental College, HITEC-IMS.
- IX. **Examination:** A specific type of assessment used to measure or quantify the achievement of specific learning objectives, particularly cognitive achievement.
- X. **External Examiner:** A person holding suitable qualifications recognized by PMC in the relevant discipline who belongs to any other medical college/university.
- XI. **Internal Examiner:** a faculty member approved by the principal of the dental college HITEC-IMS from within the college.
- XII. **Grade:** A numerical calculation or expression aimed at measuring or gauging the quality or level of a student's performance in a given subject.
- XIII. **Learning Outcomes:** Statements that describe significant and essential learning that learners have achieved and can reliably demonstrate at the end of the BDS program.
- XIV. **Professional Examination:** External examination conducted for BDS by the university based on which a student is declared as pass or fail.
- XV. **Table Of Specifications:** A basic framework for showing alignment between learning outcomes, modes of information transfer and assessment tools.





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- XVI. **University:** The college is affiliated with the National University of Medical Sciences (NUMS) established under Act No. XVII of 2015.
- XVII. **Weightage:** The percentage contribution of the assessment towards the final aggregate. All weights will add up to 100%.

**D. Rationale of Assessment**

- I. The purpose of any assessment is to make inferences (decisions, judgements, or conclusions) about the skills of examinees and these inferences should be generalisable from the particular set of items included in the examination into the larger domain from which the items were sampled.
- II. Assessments set the tone for the way the students will study. For example, recall assessments promote rote learning and high-fidelity clinical context-based (scenario/vignette) questions encourage a problem-solving manner of thinking via the application of knowledge.
- III. Assessment drives learning, producing a catalytic effect motivating students to study.
- IV. Help identify learning content areas of deficiency, needing remediation, or requiring further learning.
- V. Help identify content areas where the instruction methods can be improved.
- VI. Determine competency in each content area and provide summative value judgments such as marks & grades.

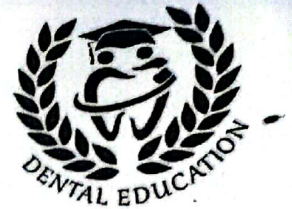
**E. Assessment Methods**

- I. **Selected Response Questions:**
  - a. Multiple Choice Questions (MCQs) - (Refer to Annexure II for a sample)
- II. **Constructed Response Questions**
  - a. Structured Essay Questions (SEQs) - (Annexure III)
  - b. Case Based Learning (CBL) - (Teaching - Annexure IV, Assessment- Annexure V)
- III. **Observation of Clinical Performance:**
  - a. Objective Structured Performance Examination (OSPE) - (Annexure VI)
  - b. Objective Structured Clinical Examination (OSCE) - (Annexure VII)
  - c. Direct Observation of Procedural Skills (DOPS) - (Annexure VIII)
  - d. Mini-Clinical Evaluation Exercise (Mini-CEX) - (Annexure IX)
  - e. Short & Long Clinical Cases
  - f. Logbooks





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**F. Summative Assessments**

**a. End of Block Examinations (EoB)**

- I. There will be two EOB theory exams conducted at the end of each of blocks I & II for the assessment of knowledge & concepts of the students.
- II. Assessment via integrated OSPE; OSCE; CBLs; Long/Short Cases; DOPS; Mini-CEX will be conducted at the end of each block exam to assess the skills and attitude of the students.
- III. The syllabi, schedule, and date for the EoB exam will be announced at least 02 weeks prior to the examination.
- IV. The appropriate assessment tools for each assessment will be decided by the respective faculty according to their given blueprint.
- V. The Pre-Annual examination will include theory and practical assessments and will be conducted after the completion of the curriculum.
- VI. The Pre-Annual examination will comprise the complete syllabus of the year.
- VII. The Table of Specifications (ToS) for Pre annual exam will be the same as that of the annual professional examination.
- VIII. The schedule for the Pre-Annual exam (Theory and Practical) will be announced by the examination department of the Dental College, HITEC-IMS.
- IX. Pre, per and post-hoc examination analyses will be conducted by the dental education department according to the given SOPs.
- X. The utilisation of assessment tools will be aligned with the learning objectives (knowledge, skills, and attitude) as given in the curriculum.
- XI. All information regarding scheduling and the nature of examinations will be known to the students.
- XII. Students will have to score 50% marks in theory and practical individually to pass the exams.
- XIII. Knowledge, concepts, and application of knowledge will be assessed primarily by context-rich clinical scenario/vignette-based MCQs and SEQs.
- XIV. For the assessment of skills and affective domains, structured OSPE; OSCE; Long/Short Cases; DOPS; Mini-CEX will be utilised.

**b. Annual Professional Examination**

The annual exam will be conducted according to the given assessment policy of the NUMS (Refer to Annexure I).

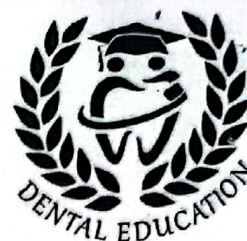
**G. Formative/Continuous Assessment**

Continuous assessment will be carried out throughout the year and feedback will be provided to the students to inform and manage the learning gaps.





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**Responsibilities**

The HoDs will ensure that the students are assessed formatively and that they receive feedback each year.

**Procedures**

- I. Formative assessment will include but is not limited to, quizzes, practice questions, assignments, group projects, and presentations.
- II. If deficiencies are found in any student's academic performance, a plan may be developed with the student to ensure all requirements are met by the end of the year.
- III. Students must have access to the HoD or their faculty designee throughout the course to solicit additional feedback regarding their performance.

**H. Internal Assessment**

- I. The weightage of internal assessment will be 20%, each for theory and practical, in BDS Professional Examination.
- II. The Internal Assessment will comprise of 1<sup>st</sup>, 2<sup>nd</sup> End of Block and Pre-Annual exam results, along with results of class tests and student attendance records.
- III. The Internal assessment record will be kept in the respective department of the dental college, HITEC-IMS, and a summary as per the university registration number will be sent to the Controller of Examinations (NUMS), at least two weeks before the commencement of the final examination.
- IV. The same internal assessment will be counted both for annual and supplementary examinations. The students who are relegated, however, can improve the internal assessment during the subsequent year.

**I. Academic Grievance Policy**

**a. Purpose**

After the college examination results have been displayed, a student can apply for grade revision/re-counting of exam results if he/she has certain doubts about the marking of results.

**b. Procedure For Grade Revision**

The following steps would be required to be taken by the student for his/her grade revision.

- i. A student can request his/her grade revision within five working days after the declaration of results on the college notice board.
- ii. The student will submit the grade revision form, available from the college website to the institutional examination cell. (Refer to Annexure IX for sample performa)





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- iii. Students who have passed (obtained 50% marks in relevant examination) cannot apply for grade revision.
- iv. Only students who did not pass the examination by deficiency of 05 marks will be considered for grade revision.
- v. Any student can apply for re-counting of their marks.

**c. Grade Revision Criteria**

During the grade revision process, it will be ensured that:

- i. All the student answers have been awarded marks.
- ii. All total marks have been accurately brought forward on the title page of the answer booklet.
- iii. No portion of any answer has been left ungraded.
- iv. Total marks in the answer booklet accurately tally with the result sheet.
- v. There is no computational/typing error in the grand total.
- vi. As class discussions are held for examination papers display and feedback, the solved answer booklet of students will not be shown to the students for grade revision.
- vii. If there is an increase or decrease in marks, the result shall be updated accordingly.

If the concerned departments find any discrepancy in the marks of the candidate, the record shall be corrected accordingly, and the revised result will be communicated to the institutional examination cell for necessary updating in the record.

**J. Online Assessment**

To be held only under extraordinary circumstances by the order of the Principal only.

**a. Purpose**

To define the scope and SOPs for online assessment and to guide regarding conducting online formative and summative assessments under special circumstances.

**b. Scope**

- I. The policy applies to online classes under special circumstances as announced by the university in view of the COVID-19 pandemic and any other such extraordinary, extenuating circumstances.
- II. This policy applies to all undergraduate students enrolled in BDS program at Dental College, HITEC-IMS.

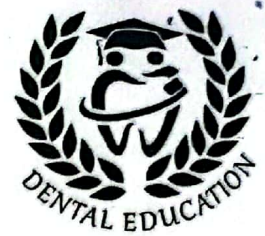
**c. Procedures**

- I. The Principal Dental College, HITEC-IMS will decide to implement the online assessment policy upon the recommendation of the university.





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- II. The HoDs of each department will be responsible to conduct formative and summative assessments throughout the duration of online teaching.
  - III. Student progress will be monitored through modalities decided by the relevant faculty members, and will include but is not limited to assignments, quizzes, open-book exams, MCQs, SAQs and projects.
  - IV. Summative assessment will take place through a live monitored online examination conducted by the individual departments.
- K. SOPs For Online Examinations**
- I. The academic calendar will be modified for online teaching sessions, with the dates for the proposed exam will be mentioned.
  - II. The IT department will arrange student ID and login information and timely convey this to the students 3-5 days before the exam, with a helpline number for the day of the examination, to address any technical issues on the day of the examination.
  - III. A sample exam will be sent to the students for familiarisation with the format as well as to assess any technical difficulties.
  - IV. The HoD of each department will be responsible to formulate questions for the examination one week in advance as per the requirement of their modified online academic calendars.
  - V. All candidates appearing for the examination will prove their identity before the start of the examination through their webcam.
  - VI. The candidate's test environment will be quiet, and there will be no other people in the room while the exam is being conducted.
  - VII. The candidate will show a 360° view of their room with their webcam and lock/bolt the door from the inside.
  - VIII. On the table/desk there will be nothing except a computer and, in case the computer does not have an internal webcam, an external web camera. All other materials will be removed unless explicitly permitted (e.g books allowed during open-book examination).
  - IX. There will be no sounds from music, television, or any other source. There will be no other computers or similar devices running in the examination room.
  - X. The lighting in the examination room must be of "daylight" quality.
  - XI. During the examination, the candidate will not communicate/speak with anyone.
  - XII. The candidate will not leave the room after starting the examination and he/she must face the computer screen throughout the examination.
  - XIII. The candidate will remain under observation by faculty throughout the exam duration.
  - XIV. The video of the candidate during the online examination will be recorded and held by the dental education department as evidence of examination integrity & fairness.





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**L. Assessment Monitoring**

- I. The curriculum committee monitors module, course, and assessment methods annually to ensure students are provided with sufficient feedback on their performance.
- II. Non-compliance is reported to the Principal via the Vice Principal of the Dental College, HITEC-IMS.

**M. Structured OSPE/OSCE SOPs**

- I. An OSPE/OSCE examination should include a minimum of 12 stations, of which at least 4 should be observed stations.
- II. All observed stations should include a clinical scenario/vignette and should require the student to perform a skilful task.
- III. The OSPE/OSCE stations should be structured, and they should include the following components:
  - a. Type of station: observed/unobserved.
  - b. Theme (Topic/Sign/Symptom/Investigation/Diagnosis).
  - c. Clinical scenario/ vignette.
  - d. The task to be performed by the student.
  - e. Required items for that station, including lab items and simulated patients.
  - f. Structured key.
- I. The objective with observed OSPE/OSCE stations is to measure attitude as well as knowledge and skill. In that regard, observed stations that involve simulated patient interaction should include the attitude component in their structured key and allocate marks to it.
- II. Please refer to Annexures VI & VII for sample structured OSPE & OSCE stations.

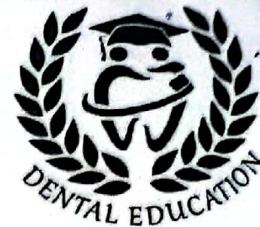
**N. Structured Case Based Learning (CBL) SOPs**

- I. Case Based Learning (CBL) is to be utilized by all years of the BDS program to orient the students and provide them with the clinical relevance necessary for the retention of basic sciences knowledge.
- II. A structured CBL may have the following components:
  - a. Topic (E.g: Temporomandibular Joint)
  - b. Topic Placement In Curriculum (E.g: Oral Medicine, 1st/2nd /3rd Block)
  - c. Selected Theme, which would be the presenting complaint of the patient. E.g: TMJ dislocation, limited mouth opening etc.
  - d. Learning Objectives
  - e. Clinical Scenario/Vignette
  - f. Discussion Questions
  - g. Multimedia Supporting Resources, including but not limited to clinical/intra-oral pictures, radiographs, and videos.





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- h. Learning Resources, including but not limited to university-recommended textbooks, reference books, and relevant journal articles.
- III. Please refer to Annexure IV for sample CBLs and Annexure V for sample CBL assessment performa.

**O. Assessment Pre, Per & Post Hoc Analyses**

**a. Assessment Pre-Hoc Analysis SOPs**

- i. All departments that have medical education qualified faculty members (having performed CHPE or MHPE) will perform the assessment pre-hoc analysis of their discipline according to the assessment pre-hoc SOPs described in the institutional assessment policy.
- ii. The medical education qualified member of the relevant discipline will submit the assessment pre-hoc analysis report along with relevant question paper to the dental education department for record keeping.

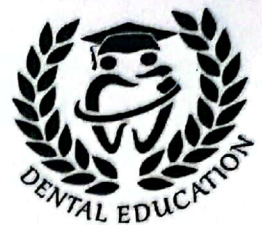
**Guidelines For Quality Stem & Lead-In Statement Construction**

- i. Each item should focus on an important concept or phenomenon as described in the ToS. Exam items & methods should be aligned with instructional objectives.
- ii. The sample of items used in the assessment should be representative of the learning objectives.
- iii. Most items should assess the application of knowledge instead of recall of isolated facts.
- iv. MCQ item stem & lead-in statement should be closed-ended and focused, i.e., it must be phrased like a question with a question mark at the end. 'Complete the sentence' type MCQ items are not recommended.
- v. Application-level MCQs must include a lead-in statement. The lead-in statement should be closed and focused, i.e., phrased like a question.
- vi. Stem, lead-in statement & distractor text must be clear and unambiguous.
  - a. Avoid imprecise phrases such as: "*is associated with*", "*is useful for*", and "*is important*".
  - b. Avoid words that provide cueing, such as "*may*" or "*could be*".
  - c. Avoid vague terms such as "*usually*" or "*frequently*".
  - d. Refrain from the use of words "*not*", "*expect*", "*all of the above*", "*none of the above*", or "*which option is true/false*".
- vii. The stem should follow the "*cover test*," i.e., the MCQ item can be answered without reading the response options.
  - a. Most students should be able to answer the MCQ item with all the options covered. For this, the question stem must include enough information for the student to identify the answer comfortably.





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- b. When developing MCQ items, covering the options, and attempting to answer the item is an excellent way to check whether this rule has been followed.
- viii. The context (clinical vignette/scenario) should add value to the MCQ item stem, and it should not be overly long, too complicated, or purposefully tricky to understand.
- ix. The stem should not contain ambiguous, difficult-to-understand English words, unnecessary information, abbreviations, or technical jargon.
- x. The use of open-ended "fill-in-the-blanks" type of MCQ items that are not phrased like a question with a question mark at the end is unacceptable.

**Guidelines For Quality Distractors Construction**

- ✓ Distractors must be clearly worded, relevant (have no odd one-out distractor) and be of similar length.
- ✓ Distractors should be homogenous and plausible regarding their content, measuring only dimension (measuring only one subtheme: diagnosis, investigations, management etc.)
- ✓ Data presentation should be homogenous (e.g., all response options either be in percentages or ranges, not both.)
- ✓ Avoid using informative statements like definitions in the distractors.
- ✓ Avoid using redundant phrases in distractors.
- ✓ The maximum length of distractors may be limited to 10 words.
- ✓ Distractors must be mutually exclusive, and repetition of phrases/items (*convergence*) should be avoided.
- ✓ Distractors may be arranged in alphabetical order.

**Technical Flaws to Be Avoided**

The majority of the technical flaws in MCQ items development belong to two main categories:

- ✓ Flaws related to irrelevant difficulty.
- ✓ Flaws related to test-wiseness.

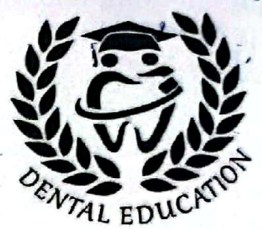
**Guidelines to Avoid Flaws Related to Irrelevant Difficulty**

- ✓ MCQ item stem, lead-in statement and distractors must not be overly complicated, difficult, or too long.
- ✓ The number of words in each option increases the reading load, shifting the construct being measured from content knowledge to reading speed, which is not the purpose of the assessment.
- ✓ The stem and distractors should not contain redundant, extraneous information that is not required for reaching the answer to the MCQ question.





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- ✓ Numeric data must be presented consistently, e.g., numeric data should be presented in ascending numeric order.
  - All distractors should contain only one numeric data format, such as ranges, percentages, and greater/lesser than values, and must not have a mixture of them.
- ✓ Vague frequency terms such as “often”, “usually”, and “frequently” because they are subjective terms, and they are not consistently defined or interpreted by the readers, and sometimes not even by experts.
- ✓ Negatively worded statements containing “not” or “except” must be avoided.

**Guidelines to Avoid Flaws Related to Test-Wiseness**

- ✓ Avoid providing grammatical cues, e.g., when an option does not follow grammatically from the stem or the lead-in statement.
  - This technical flaw occurs when the MCQ author focuses more attention on writing the correct answer than on the distractors, leading to the potential for grammatical errors.
  - To avoid this flaw, read each option immediately following the stem to ensure that the language is a good fit. Another way to prevent the flaw is always to use closed lead-ins, which helps the item writer avoid this problem.
- ✓ Avoid the presence of grouped or collectively exhaustive distractors, e.g., only one condition can be valid for the concentration of any given substance or severity of a disease that it can either increase, decrease, or have no change. Furthermore, all three options should not be offered as distractors because the other two options become obvious non-functional distractors.
  - This flaw occurs because the MCQ item authors want to have a total of five options, but it is not an improvement of the item to add options that have no merit. Instead, the author should be able to rank order each option on the same dimension, and no subset of distractors should include all possible outcomes.
- ✓ The use of absolute terms such as “always”, “never”, and “frequently” should be avoided in the stem, lead-in statement and distractors text.
- ✓ The correct ‘key’ option should not be the most extended and detailed, joining several phrases with “and”, while the other distractors are simple, straightforward, and short in comparison.
- ✓ The presence of word repetition or similar sounding words (also known as “clang clues”) in stem/lead-in statements and distractors should be avoided. E.g., The word “unreal” used in the stem is similar to the correct answer “derealisation”.



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- The same flaw occurs if a word is repeated only in a metaphorical sense, such as when a stem mentions bone pain and the correct answer begins with the prefix "osteo-"
- MCQ author should scan the options and item stem to check for such words or phrase repetition.
- ✓ Distractors consisting of a list of items with minor differences are known as "convergence" phenomena. The underlying flaw is that the correct answer is the option that has the most in common with the other options, and thus the test-wise student can converge on the correct answer just by counting the number of times specific terms appear.
  - This flaw can also occur without being directly reflected in the language, if an item asks which pharmacotherapy is most effective, and three of the five options are in one class of drugs, the savvy student may rule out the other two as less likely options. An NSAID would be an odd-one-out option among three cephalosporin drug options.
  - This flaw occurs when item writers start with the correct answer and write the distractors as permutations of the right answer. The correct answer will then be more likely to have elements in common with the other options, and the incorrect answers are more likely to be outliers.
  - This technical flaw can be avoided by reviewing all options and seeing if words or terms are repeated across options.
- ✓ Avoid the case where a comprehensive vignette is described but is unnecessary as regards the question being asked by the lead-in statement.
  - Often a complex vignette describes a condition, disease, or diagnosis thoroughly, but it is followed by a question which requires no reference to the information given in the vignette, only superficial knowledge about the condition in the question.

**Criteria For Content Validity Analysis**

No. of MCQs from each topic will be compared with the requisite number given in the Table of Specifications (ToS) of the relevant discipline's curriculum.

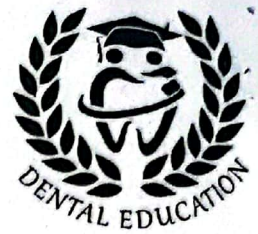
**Assessment Pre-Hoc Item Analysis Report Generation**

After a Pre-Hoc item analysis meeting with the relevant subject specialist, the dental education department will generate an academic event report on the following pattern. Its submission to the exam cell is required as evidence of pre-hoc quality assurance of the MCQ assessment, as per the exam cell SOPs. Please refer to Annexure X for a sample pre-hoc report performa.





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**b. Assessment Per-Hoc Analysis SOPs**

- I. Multisource 360° feedback regarding exam conduction would be obtained from all the relevant stakeholders such as the students, the relevant faculty, and the supporting staff.
- II. This multisource input will help the dental education department and the college administration to develop a comprehensive understanding of the practical, on-ground matters of examination conduction and the conduciveness of the environment in which the examination is conducted.
- III. Three 5-point Likert Scale questionnaires have been developed which are targeted towards the students, the faculty members, and the supporting staff members.
- IV. All the students appearing in the examination will fill out the per-hoc questionnaire and no student will be allowed to leave the examination venue without filling it out.
- V. All the invigilators present in the examination venue, along with the exam superintendent will provide their valuable feedback on the questionnaire designed for the faculty.
- VI. The supporting staff includes the staff from the examination cell, IT department and any other staff members facilitating the conduction of the examination shall fill out the questionnaire designed for the supporting staff.
- VII. All three identified stakeholders (students, faculty and supporting staff) will provide their feedback on the conduction of every end of the block (EoB) and pre-annual examination held in the institution.
- VIII. Please refer to Annexure XI for sample per-hoc analysis performa.

**c. Assessment Post-Hoc Analyses SOPs**

Please refer to Annexure XII for a sample post-hoc analysis report.

**Distractor Analysis**

1. Any distractor chosen by 5% or less of the total number of students appearing in the examination is considered a non-functional distractor.
2. An MCQ item with no non-functional distractors has a distractor efficiency of 100%. However, a single non-functional distractor has a distractor efficiency of 66%, two have 33%, and with three it comes to 0%.
3. All non-functional distractors in all MCQs must be revised by the relevant department.

**Difficulty Index**

1. The difficulty index is calculated by dividing the total number of correct responses and the total number of students appearing in the examination.
2. Its value varies between 0 to 100. The higher the value, the easier the MCQ item.



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Cut-off Value	Grading	Interpretation/ Recommendation
100	Too Easy	MCQ item is too easy and must be removed from the questionnaire.
70 – 90	Easy	Some items should be easy enough to be answered by the majority of the class.
30 – 70	Excellent	Items in this mid-range difficulty have more likelihood of demonstrating adequate discrimination of students' knowledge.
29 – 20	Moderate	Some questions are desirable to be in this range.
< 20	Too Difficult	This value indicates a severe problem with the question item or teaching.

Table 1: Difficulty Index Interpretation

## **Discriminatory Index**

1. The discriminatory index is calculated by subtracting the scores of the upper 27% of students from the lower 27% of students and dividing the result by the group size of 27% of students.
2. Its value ranges from -1 to 1. The higher the value, the more the MCQ item discriminates between a high performing and a low-performing student.
3. The discriminatory index can be improved by revising the non-functional distractors from MCQ items.

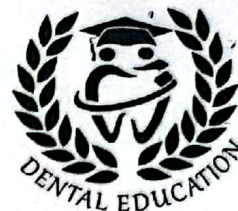
Cut-off Value	Grading	Interpretation	Recommendation
0.40 or Above	Excellent	Reflects quality MCQ item construction and teaching.	Definitely keep it in the MCQ bank.
0.30 – 0.39	Good	Good discrimination by MCQ item.	Keep in MCQ bank.
0.20 – 0.29	Fair	Adequate discrimination by MCQ item.	Maybe keep it in the MCQ bank.
< 0.20	Poor	Insignificant discrimination.	Check the key for correctness, if correct, discard the MCQ item.
< 0	Negative Discrimination	Low-scoring students are performing well on this MCQ item which is unacceptable.	Definitely discard the MCQ item.

Table 2: Discriminatory Index Interpretation





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**Reliability/ Internal Consistency**

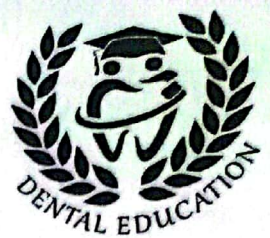
1. The reliability/internal consistency of the MCQ questionnaire is assessed by calculating Knudson-Richardson 20 (KR-20) Index.
2. Its value ranges between 0 to 1. **The minimum required value is 0.8**; otherwise, the questionnaire is not considered to be reliable.
3. A value of 1.0 indicates redundancy in the questionnaire; multiple MCQ items are measuring the same question, so those repetitive MCQ items must be eliminated.
4. A negative/poor value ( $<0.8$ ) of KR-20 indicates:
  - a. The low number of MCQ items.
  - b. Poor distractor efficiency.
  - c. Negatively worded, true/false MCQ lead-in statements.
  - d. High standard deviation value.
  - e. Inferior internal consistency of the questionnaire.
5. Reliability can be improved by:
  - a. Non-functional distractors in MCQ items should be revised.
  - b. MCQ items with negative discriminatory index values should be deleted from the questionnaire and MCQ items with poor discriminatory index values should be revised.
  - c. The practice of using true/false and negative statements MCQ items containing "not", "except" etc should not be used.

Cut-off Value	Grading	Interpretation/ Recommendation
$< 0$	Deplorable	Absolutely unacceptable.
0.0 – 0.79	Poor	Conditional acceptance based upon no. of MCQ Items.
<b>0.80 – 0.89</b>	<b>Good</b>	<b>Reflects quality MCQ item construction.</b>
0.90 – 0.99	Excellent	Reflects MCQ item construction.
1	Poor	Multiple, redundant items are measuring the same construct.

Table 3: Questionnaire Reliability Interpretation



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**P. Annexures**

**a. Annexure II – Sample MCQs**

**Bloom's Taxonomy – Recall Level – Sample MCQ Item**

A survey was conducted to find the prevalence of dental caries in different areas of Pakistan. It was discovered that the region of Gilgit has the highest prevalence of dental caries. Which of the following is the recommended level of fluoride in water to prevent dental caries in this area?

- i. 0.7 ppm
- ii. 0.9 ppm
- iii. 1 ppm
- iv. 1.2 ppm

**Bloom's Taxonomy – Application Level – Sample MCQ Item**

A 55-year-old female presented to a dental clinic with presenting complaint of pain in the pre-auricular region. On clinical examination, the temporomandibular joint was tender to palpation. Radiographic examination revealed erosions on the condylar head of the mandible. ESR laboratory investigation was done which turned out to be normal. What will be your most likely diagnosis in this case?

- i. Osteoarthritis
- ii. Rheumatoid arthritis
- iii. Disc displacement without reduction
- iv. Temporomandibular dysfunction syndrome





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**b. Annexure III – Sample SEQs**

**Bloom's Taxonomy – Recall Level – Sample SEQ Item**

Q. 1 (a) – Define different types of junctions found in the oral mucosa.

(3)

(b) – Classify non-keratinocytes and their functions

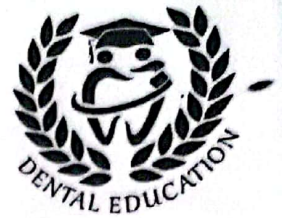
(2)

**Bloom's Taxonomy – Application Level – Sample MCQ Item**

A 30-year-old male presented to your dental clinic with the presenting complaint of severe continuous pain in his right lower jaw for the past 3 days. On history taking, he reports that he got root canal therapy performed in his first right mandibular 6 months back. Clinically, the tooth is tender to percussion, and he feels as if the tooth is elevated from its socket. Radiographic examination reveals incomplete root canal therapy with no obturation performed in the root canals. What will be the most probable diagnosis in this case? Design a management plan for this case.



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**c. Annexure IV – Sample Basic Sciences CBL**

**Topic:** Temporomandibular Joint

**Curriculum Placement:** Oral Biology, 3<sup>rd</sup> Block.

**Theme:** TMJ Dislocation

**Learning Objectives**

By the end of the case-based learning session, the students of 1<sup>st</sup> Year BDS will be able to:

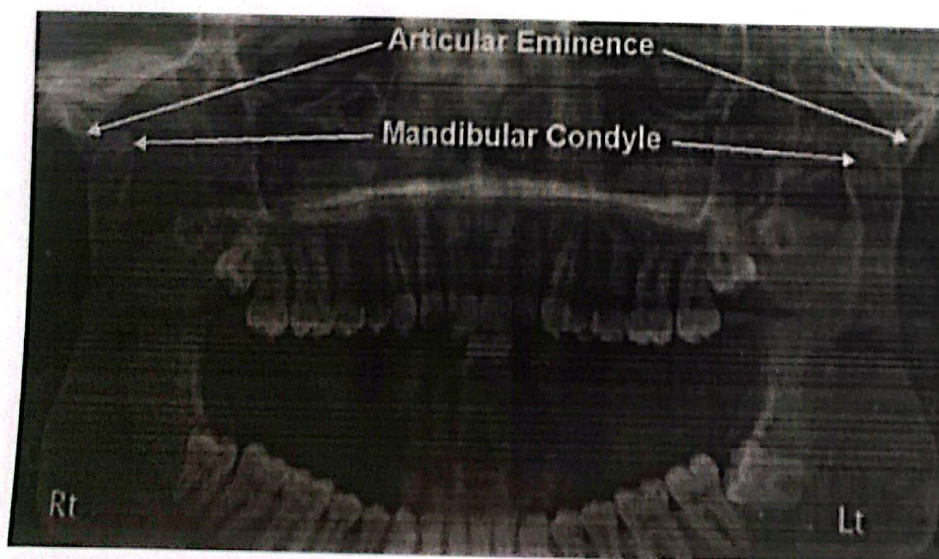
1. Describe the functions of muscles of mastication based on their anatomical attachments.
2. Identify clinical signs and symptoms of open mandibular dislocation (lockjaw)
3. Discuss the etiological factors that may cause mandibular dislocation.

**Clinical Scenario/Vignette**

A 25-year-old male presents with the chief complaint of inability to close his mouth completely and pain in front of the ear on both sides of his face. On taking history, the patient reports that yesterday he underwent prolonged dental surgery, regarding the surgical removal of his impacted mandibular left third molar. On clinical examination, there is tenderness on palpation, of the masticatory muscles. The patient's lips are incompetent, there is drooling of saliva and the patient is having difficulty in articulation of speech. On radiographic examination, there is bilateral anterior displacement of the articular disc & mandibular condyles.

**Discussion Questions**

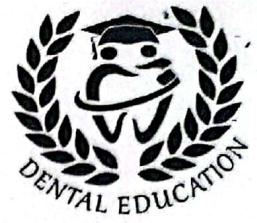
1. What condition could the patient be possibly suffering from?
2. What could be the possible causes of the patient's condition?
3. Which muscles elevate the mandible and how do they achieve that?
4. Can this condition occur in the absence of external trauma?







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**d. Annexure IV – Sample Clinical Sciences CBL**

**Topic:** Temporomandibular Joint

**Curriculum Placement:** Oral Medicine, 3<sup>rd</sup> Block.

**Theme:** Limited mouth opening (trismus).

**Learning Objectives**

By the end of the case-based learning session, the students of 3<sup>rd</sup> Year BDS will be able to:

1. Describe the functions of muscles of mastication based on their anatomical attachments.
2. Identify clinical signs and symptoms of limited mouth opening (trismus)
3. Discuss the etiological factors that may cause limited mouth opening.

**Clinical Scenario/Vignette**

A 50-year-old female presents with the chief complaint of difficulty in chewing and speech, due to limited motion of the lower jaw. On taking history, the patient reports that she is suffering from oral squamous cell carcinoma, which is situated on the left side of her face. She is undergoing radiotherapy as a part of its management. On clinical examination, the inter-incisal opening is about 17 mm. There is tenderness on palpation, in the preauricular region. The mandible of the patient deviated from the midline towards the left side.

**Discussion Questions**

1. What condition could the patient be possibly suffering from?
2. What could be the possible causes of the condition?
3. How much is the average mouth opening?





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**e. Annexure V - CBL Session Feedback Report Sample**

*Adapted from (European Commission, 2020)*

Discipline Name: \_\_\_\_\_ Dated: \_\_\_\_\_

Student Batch: \_\_\_\_\_

Facilitator Name: \_\_\_\_\_

CBL Topic & Theme: \_\_\_\_\_

**Case Complexity**

☐ Straightforward ☐ Some complex features ☐ Complex

**What aspects of the case were the main focus of the discussion? (tick as many as relevant)**

<input type="checkbox"/> Pathophysiology	<input type="checkbox"/> Clinical Findings/History
<input type="checkbox"/> Differential Diagnoses	<input type="checkbox"/> Investigations
<input type="checkbox"/> Management Plan	<input type="checkbox"/> Communication/Ethics

**What constructive, actionable feedback was provided to the students?**

**What was done good (by students)?**

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**What can be improved (regarding student performance)?**

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**Class Performance Decision By The Facilitator**

After the conduction of the case-based learning session, does the facilitator feels the need for further teaching/revisiting the topic?

☐ More sessions are required. ☐ Brief revision/assessment required.  
☐ Adequate performance by class achieved.

Facilitator's Signature: \_\_\_\_\_





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f. **Annexure VI – Sample Structured OSPE Station**

**Station Type:** Observed.

**Theme:** Blood Pressure.

A 45-year-old obese man came to the OPD department with the presenting complaint of headaches, flushing, sweating and difficulty in sleep. History reveals that he is a chronic smoker and uses too much salt in his diet; he also has a family history of high blood pressure.

**Required Items:** Sphygmomanometer, subject/simulated patient.

**Task:** Measure the blood pressure of the subject using the auscultatory method.

**Structured Key:**

1. **Greet the subject, introduce yourself, take informed consent and perform necessary exposure.** (1)
2. Positioning of sphygmomanometer's cuff and stethoscope. (1)
3. Record the patient's blood pressure. (2)
4. **Cover the exposed area and thank the subject.** (1)

The underlined steps 1 and 4 assess the attitude of students with the subject/simulated patient.

g. **Annexure VI – Sample Structured OSCE Station**

**Station Type:** Observed

**Theme:** Clinical Examination of Temporomandibular Joint

A 65-year-old male presents to the OPD with presenting complaint of pain in front of his right ear. On history taking, the patient reports that he also experiences uncomfortable grinding sensations around his ear, and he also hears a clicking sound. The patient also reports that just before the symptoms first began, he ate a gourmet triple-patty burger.

**Required Items:** Simulated Patient/Subject, Stethoscope, Sterile Gloves.

**Task:** Perform the clinical examination of the temporomandibular joint.

**Structured Key**

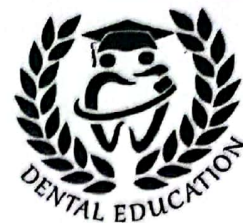
1. **Greet the subject, introduce yourself, take informed consent and perform the necessary clinical exposure for the task.** (1)
2. Perform adequate clinical examination of the temporomandibular joint. (2)
3. **Cover the exposed area and thank the subject for his/her cooperation.** (1)



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#### h. Annexure VII – DOPS Checklist Sample

Adapted from (Australian and New Zealand College Of Anaesthetists, n.d.; Watson et al., 2014)

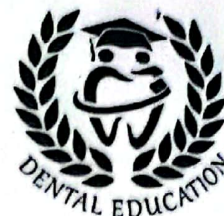
Adapted from (Australian and New Zealand College Of Anaesthetists, n.d.; Watson et al., 2014)				
Procedure	Name			
	Setting	OPD	Scheduled/Elective	Urgent
	Degree of Complexity	Low	Moderate	High
	Conduction	On a patient	Via Simulation	
	No. of times performed previously			

Observation Criteria	To ensure safe, efficient care in this aspect:									
	Significant input is required from the facilitator			Some guidance provided by the facilitator			Trainee able to manage independently			Unable to Supervise (UTS)
Clinical Knowledge	Demonstrates relevant knowledge and understanding of the procedure including indications, contraindications, anatomy, technique, side effects and complications.									
	1	2	3	4	5	6	7	8	9	UTS
Consent	Explains the procedure to the patient and obtains valid and adequate informed consent.									
	1	2	3	4	5	6	7	8	9	UTS
Procedure Preparation	Prepares appropriately for the procedure. Ensures assisting staff are present; checks equipment and prepares drugs, ensures clinically indicated monitoring; arranges workspace ergonomically.									
	1	2	3	4	5	6	7	8	9	UTS
Vigilance & Professionalism	Demonstrates situational awareness through constant clinical monitoring. Knows when to seek assistance, abandon procedure or arrange alternative care to prevent harm to the patient.									
	1	2	3	4	5	6	7	8	9	UTS
Aseptic Technique	Demonstrates aseptic/clean technique and standard (universal) precautions.									
	1	2	3	4	5	6	7	8	9	UTS
Technical Ability	Demonstrates manual dexterity and confidence; demonstrates correct procedural sequence with minimal hesitation and unnecessary actions.									
	1	2	3	4	5	6	7	8	9	UTS
Patient Interactions	Provides reassurance and checks for discomfort, concerns, and complications.									
	1	2	3	4	5	6	7	8	9	UTS
Post-Procedure Management	Documents the episode including problems and complications; arranges and documents plans for post-procedural care.									
	1	2	3	4	5	6	7	8	9	UTS
Teamwork	Provides clear and concise instructions to assisting staff and conveys relevant information concerning the patient and plans to team members.									
	1	2	3	4	5	6	7	8	9	UTS
Was the procedure completely satisfactory?	Yes					No				





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What was the focus of the discussion during the procedure?

**Constructive, Actionable Feedback**

**What was done well?**

*E.g: Detailed anatomical knowledge; Thorough explanation of potential complications in a language understood by the patient; Well prepared before starting. Confident interactions with the patient.*

**Areas that required supervisory input**

*E.g: Managing sterility in crowded situations; Giving clear instructions to assistant in a timely manner; For successfully completing the procedure, suggest... e.g., using wedges during interproximal restorations.*

**Entrustment Decision By Facilitator**

What level of supervision did the trainee require for <b>THIS</b> procedure?	The trainee needs a facilitator presence at the dental chairside			Trainee can perform the procedure while the facilitator is present in the department			A trainee could manage the procedure independently and does not need direct supervision		
	1	2	3	4	5	6	7	8	9

**Entrustment Criteria**

1. Not comfortable leaving trainees unsupervised for any period of time.
2. Comfortable leaving trainee briefly i.e., take a brief call.
3. As in 2, but comfortable staying away for a bit longer.
4. Happy to leave the area but remain immediately available in the hospital. Feels the need to check in on the trainee at regular intervals.
5. Happy to leave the area but remain immediately available in the hospital e.g., not take on another case themselves.
6. As in 5 but happy to take on another case themselves.
7. Could potentially be out-of-hospital but would want to talk with the trainee before the trainee started the procedure.
8. Supervisor out-of-hospital. Confident that trainees can do the procedure but want to be notified that they are doing it.
9. Trainee could complete the procedure as a consultant. Appropriate if they don't contact the supervisor.

Does the trainee need to be re-assessed?

Yes

No

What needs to be re-assessed?

Name of Concerned	Discipline	
	Facilitator	
	Trainee	
Dated		



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**i. Annexure VIII – Mini-CEX Checklist Sample**

*Adapted from (American Board of Internal Medicine, n.d.)*

<b>Assessor Name</b>					
<b>Trainee Name</b>					
<b>Case/Diagnosis</b>					
<b>Patient</b>	<b>Age</b>				
	<b>Gender</b>	Male		Female	
	<b>Setting</b>	New Case		Follow-Up Case	
		OPD/Elective		Urgent	
<b>Case Complexity</b>	Low		Moderate		High
<b>Case Focus</b> <i>(Select all applicable)</i>	Data Gathering	Diagnosis	Management		Counselling/ Professionalism

Criteria	Unsatisfactory			Satisfactory			Superior			Not Observed
	1	2	3	1	2	3	1	2	3	
Patient Interviewing Skills										
Physical Examination Skills										
Professionalism										
Clinical Judgement										
Counselling Skills										
Organization/ Efficiency										
Overall Clinical Competence										

**Feedback**

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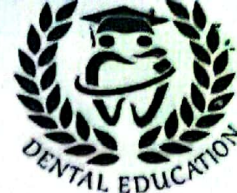
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**Assessor's Signature:** \_\_\_\_\_





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**j. Annexure - Examination Pre-Hoc Item Analysis Report Sample**

Examination: \_\_\_\_\_

Department: \_\_\_\_\_

Type of Question Items:

**MCQs**

**SEQs**

The subject representative(s) certify that they have duly checked the content validity (alignment of assessment with ToS) of the question items they are submitting.

**The Number of Question Items:**

Submitted

\_\_\_\_\_  
Approved Without Revision

\_\_\_\_\_  
Approved With Minor Revision (Grammatical, spelling errors)

\_\_\_\_\_  
Approved With Major Revision (Stem shortened/replaced)

\_\_\_\_\_  
Distractors Revised

\_\_\_\_\_  
Recommended For Replacement

**Overall Feedback Regarding The Submission**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Case File No.03/Den/DDE/Dated: Sep 2022**

Dental Educationist: \_\_\_\_\_  
(Name & Signature)

02 Subject Representatives<sup>1</sup>: \_\_\_\_\_  
\_\_\_\_\_

<sup>1</sup> Departmental Medical Education Qualified Faculty Member (if applicable) and relevant HoD signatures.



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**References**

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<https://www.anzca.edu.au/getattachment/a7152417-3ebc-484d-a914-e9b625f51f5f/WBA-direct-observation-of-procedural-skills-paper-form>
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- Watson, M. J., Wong, D. M., Kluger, R., Chuan, A., Herrick, M. D., Ng, I., Castanelli, D. J., Lin, L., Lansdown, A. K., & Barrington, M. J. (2014). Psychometric evaluation of a direct observation of procedural skills assessment tool for ultrasound-guided regional anaesthesia (DOPS). *Anaesthesia*, 69(6), 604–612. <https://doi.org/10.1111/anae.12625>





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Case File No. 03/DEN/DDE Dated: 21st Nov 2022

Prepared By: *Faizan*  
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Principal  
Dental College, HITEC-IMS.