

01	☐ A	☐ B	☐ C	☐ D	☐ E
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38	☐ A	☐ B	☐ C	☒ D	☐ E
39	☐ A	☒ B	☐ C	☐ D	☐ E

PRACTICE QUESTIONS

NDEB/BNED - The National Dental Examining Board of Canada / Le Bureau National D'examen Dentaire Du Canada

OMRF

Radiologie buccale et maxillo-faciale

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for NDEB/BNED - The National Dental Examining Board of Canada / Le Bureau National D'examen Dentaire Du Canada **OMRF**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

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QUESTION 1

MULTIPLE CHOICE

Which of the following properties of X-rays contribute to their diagnostic usefulness in oral and maxillofacial radiology? (Choose two.)

- ☒ **A** Penetrating power, which allows X-rays to pass through tissues of varying densities
- ☐ **B** Magnetic deflection, which permits focusing of the X-ray beam
- ☒ **C** Fluorescence and photographic effect, which permit image recording
- ☐ **D** Radioactive decay, which enhances tissue contrast
- ☐ **E** Differential absorption by tissues of varying densities, producing the image

ANSWER A • C

WHY X-rays have several clinically relevant properties: penetrating power, differential absorption by tissues, and the ability to cause fluorescence and affect photographic film (or digital receptors). Magnetic deflection is not a property of X-rays (it is a property of charged particles), and X-rays are not produced by radioactive decay. The combination of penetrating power with differential absorption is what creates the radiographic image, and fluorescence/photographic effect is what allows it to be recorded.

QUESTION 2

MULTIPLE CHOICE

Which of the following are recommended radiation protection measures for the operator during intraoral radiography? (Choose two.)

- ☒ **A** Standing at least 2 metres (6 feet) from the patient behind a protective barrier or outside the path of the primary beam
- ☐ **B** Holding the receptor in the patient's mouth during every exposure to keep it stable
- ☒ **C** Wearing a personal dosimeter (film badge or TLD) when routinely performing radiography
- ☐ **D** Increasing milliamperage to reduce the required number of exposures
- ☐ **E** Positioning the tube head so that the useful beam points toward the operator's torso

ANSWER A - C

WHY The operator should maximize distance from the patient and scatter, ideally standing behind a protective barrier or at least 2 m away, and should wear a personal dosimeter to monitor cumulative exposure. The operator must never hold the receptor in the patient's mouth during exposure (the patient or a positioning device should stabilize it). Increasing milliamperage raises patient dose and does not protect the operator. The primary beam must never be directed at the operator.

QUESTION 3

SINGLE CHOICE

On a maxillary molar periapical radiograph, the normal anatomical structure that appears as a radiopaque U- or J-shaped structure superimposed over the apices of the maxillary molars is the:

- ☐ A Maxillary sinus floor
- ☒ B Zygomatic process of the maxilla
- ☐ C Hamular process
- ☐ D Nasal septum

ANSWER B

WHY The zygomatic process of the maxilla (and sometimes the zygomatic bone) characteristically appears as a U- or J-shaped radiopacity superimposed over the apices of the maxillary molars on a periapical radiograph. The maxillary sinus floor appears as a thin radiopaque line that may dip between tooth roots. The hamular process is seen near the maxillary tuberosity, and the nasal septum is midline over the central incisors.

QUESTION 4

SINGLE CHOICE

Compared with a periapical radiograph, a typical digital panoramic radiograph generally delivers to the patient:

- ☐ A A markedly lower effective dose
- ☐ B Approximately the same effective dose
- ☒ C A higher effective dose but with better resolution
- ☐ D A negligible dose because no X-rays reach the salivary glands

ANSWER C

WHY A panoramic radiograph, because of rotational tomography and beam geometry, generally delivers a higher effective dose than a single intraoral periapical radiograph, although doses vary by machine and settings. The image resolution of a panoramic radiograph is generally lower than that of an intraoral radiograph, not higher. The salivary glands are exposed to scattered radiation, so the dose is not negligible. The exam is useful because of the broad coverage, not because of lower dose.

QUESTION 5

SINGLE CHOICE

A well-defined, corticated, radiolucent lesion in the periapical region of a vital mandibular incisor in a child is most consistent with a:

- ☐ A Periapical granuloma
- ☐ B Radicular cyst
- ☒ C Lateral periodontal cyst
- ☐ D Dentigerous cyst

ANSWER C

WHY A periapical granuloma or radicular cyst would be associated with a non-vital tooth, so a vital tooth excludes those. A dentigerous cyst surrounds the crown of an unerupted tooth, not an erupted incisor. A lateral periodontal cyst classically appears as a well-corticated, round or tear-shaped radiolucency along the lateral root surface of a vital mandibular anterior or premolar tooth and may occur in children and young adults.

QUESTION 6

SINGLE CHOICE

A multilocular radiolucent lesion of the posterior mandible, described as having a 'soap-bubble' or 'honeycomb' appearance and associated with expansion of the cortical plates, is the classic radiographic description of:

- ☒ A Ameloblastoma
- ☐ B Stafne bone cyst
- ☐ C Fibrous dysplasia
- ☐ D Condensing osteitis

ANSWER A

WHY Ameloblastoma classically presents as a multilocular radiolucency with internal septations producing a 'soap-bubble' or 'honeycomb' pattern, often with cortical expansion in the posterior mandible. A Stafne defect is a well-defined radiolucency below the mandibular canal near the angle and is not multilocular. Fibrous dysplasia typically shows a ground-glass mixed radiolucent-radiopaque pattern. Condensing osteitis is a localized radiopacity.

QUESTION 7

SINGLE CHOICE

On a panoramic radiograph, a radiolucent band crossing the ascending ramus of the mandible from the condyle to the region of the molars represents the:

- ☐ A Mandibular canal
- ☒ B Airway shadow of the oropharynx
- ☐ C Stylohyoid ligament
- ☐ D Submandibular gland fossa

ANSWER B

WHY The radiolucent band crossing the ramus on a panoramic image is produced by the air-filled oropharyngeal airway between the dorsum of the tongue and the soft palate/pharyngeal wall. The mandibular canal is a thin radiolucent band bordered by two radiopaque lines within the mandible. The stylohyoid ligament may appear as a radiopacity below the mandible, not a radiolucency across the ramus. The submandibular gland fossa is a radiolucency on the lingual aspect of the mandibular body, not the ramus.

QUESTION 8

SINGLE CHOICE

According to the principle of ALARA ('As Low As Reasonably Achievable') applied to dental radiology, the most appropriate justification for taking a radiograph is:

- ☐ A The patient's request for a 'check-up' film
- ☒ B A clinical examination finding that cannot be evaluated adequately by other means
- ☐ C A desire on the part of the dentist to confirm a recent diagnosis already established clinically
- ☐ D Routine annual full-mouth radiographs for every adult patient regardless of risk

ANSWER B

WHY The ALARA principle (and selection criteria such as those published by the American Dental Association and Health Canada) require that each radiographic examination be justified on the basis of a specific clinical question that cannot be answered by clinical examination alone. Patient request, confirmation of an established diagnosis, and routine 'annual' full-mouth series without individualized risk assessment are not appropriate justifications on their own.

QUESTION 9

SINGLE CHOICE

A periapical radiograph shows elongated teeth with the apices cut off the film. The most likely technical error is:

- ☐ A Incorrect vertical angulation (too steep, pointing downward)
- ☒ B Incorrect vertical angulation (too flat, pointing upward)
- ☐ C Movement of the patient during exposure
- ☐ D Reversed film/backside exposure

ANSWER B

WHY Elongation of teeth (long image) and loss of the apices off the edge of the receptor are produced when the vertical angulation is too flat (not steep enough) relative to the occlusal plane. Excessive vertical angulation (too steep) produces foreshortening. Patient movement produces blurring, and reversed/backside exposure produces a light, herringbone or 'tire-track' pattern with reduced detail.