

National Testing Agency

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Crystallography and Mineralogy

Group Number :	1
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Crystallography and Mineralogy

Section Id :	899514267
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	60
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Section Marks : 60
Mark As Answered Required? : Yes
Sub-Section Number : 1
Sub-Section Id : 899514312
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 89951416631 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

The "Rhombic prism" or the prism with four rhomb-shaped faces occurs in:

1. Tertagonal system
2. Trigonal system
3. Orthorhombic system
4. Hexagonal system

Options :

89951464919. 1
89951464920. 2
89951464921. 3
89951464922. 4

Question Number : 2 Question Id : 89951416632 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Which of the following crystal faces always meet only one crystallographic axis and remain parallel to the other two?

1. Pinacoid face
2. Prism face
3. Pedion
4. Pyramid face

Options :

89951464923. 1
89951464924. 2
89951464925. 3
89951464926. 4

Question Number : 3 Question Id : 89951416633 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The base centred arrangement of unit cell is found in:

1. Cubic crystals
2. Tetragonal crystals
3. Orthohomic crystal
4. Triclinic crystals

Options :

89951464927. 1
89951464928. 2
89951464929. 3
89951464930. 4

Question Number : 4 Question Id : 89951416634 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Piezoelectricity is characteristic of:

1. Holosymmetric classes
2. Merosymmetric classes
3. Centrosymmetry classes
4. Non-Centrosymmetric classes

Options :

89951464931. 1
89951464932. 2
89951464933. 3
89951464934. 4

Question Number : 5 Question Id : 89951416635 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

In the Periclinic law, the composition plane is at:

1. Prismatic section
2. Cubic section
3. Octahedral section
4. Rhombic section

Options :

89951464935. 1
89951464936. 2
89951464937. 3
89951464938. 4

Question Number : 6 Question Id : 89951416636 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Which of the following classes is optically active?

1. Pinacoidal (Triclinic)
2. Tetartoidal (Cubic)
3. Prismatic (Monoclinic)
4. Rhombohedral (Trigonal)

Options :

89951464939. 1

89951464940. 2

89951464941. 3

89951464942. 4

Question Number : 7 Question Id : 89951416637 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The characteristic symmetry of the triclinic system is:

1. Monad axis
2. Diad axis
3. Triad axis
4. None of the above

Options :

89951464943. 1

89951464944. 2

89951464945. 3

89951464946. 4

Question Number : 8 Question Id : 89951416638 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

A crystal of quartz is capable of exhibiting:

1. Piezoelectricity
2. Pyroelectricity
3. Both of the above
4. None of the above

Options :

89951464947. 1

89951464948. 2

89951464949. 3

89951464950. 4

Question Number : 9 Question Id : 89951416639 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The Pericline twin of plagioclase are often associated with:

1. Skew twins
2. Carlsbad twins
3. Manebach twins
4. Albite twins

Options :

89951464951. 1

89951464952. 2

89951464953. 3

89951464954. 4

Question Number : 10 Question Id : 89951416640 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

A crystal twinned on the lattice plane is known a

1. Rotation twin
2. Reflexion twin
3. Inversion twin
4. Contact twin

Options :

89951464955. 1

89951464956. 2

89951464957. 3

89951464958. 4

Question Number : 11 Question Id : 89951416641 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

An axis of ----- symmetry in an individual crystal can serve as a twinning axis:

1. Two fold
2. Three fold
3. Four fold
4. Six Fold

Options :

89951464959. 1

89951464960. 2

89951464961. 3

89951464962. 4

Question Number : 12 Question Id : 89951416642 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The most common types of twins encountered in nature are:

1. Contact twins
2. Penetration twins
3. Growth twins
4. Polysysthetic twins

Options :

89951464963. 1

89951464964. 2

89951464965. 3

89951464966. 4

Question Number : 13 Question Id : 89951416643 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The bravais lattic of a sodium chloride structure is:

1. Primitive cell
2. Body-centred cube
3. Face-centred cube
4. Base-centred cube

Options :

89951464967. 1

89951464968. 2

89951464969. 3

89951464970. 4

Question Number : 14 Question Id : 89951416644 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The cubic system is characterized by:

1. Absence of singular axis
2. One singular axis
3. The singular axis
4. One singular axis with innumerable singular axes normal to it:

Options :

89951464971. 1

89951464972. 2

89951464973. 3

89951464974. 4

Question Number : 15 Question Id : 89951416645 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which of the following has three axes of fold symmetry?

1. Barytes
2. Gypsum
3. Rutile
4. Galena

Options :

89951464975. 1

89951464976. 2

89951464977. 3

89951464978. 4

Question Number : 16 Question Id : 89951416646 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Variation in the habit of crystal changes:

1. Crystal class
2. Crystal system
3. Symmetry elements
4. Crystal form

Options :

89951464979. 1
89951464980. 2
89951464981. 3
89951464982. 4

**Question Number : 17 Question Id : 89951416647 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0**

A brachypinacoid face is parallel to:

1. a-axis
2. b-axis
3. b and c axis
4. a and c axis

Options :

89951464983. 1
89951464984. 2
89951464985. 3
89951464986. 4

**Question Number : 18 Question Id : 89951416648 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0**

The interfacial angles depends upon:

1. Size of the crystal faces
2. Shape of the crystal faces
3. Form of the crystals
4. None of the above

Options :

- 89951464987. 1
- 89951464988. 2
- 89951464989. 3
- 89951464990. 4

Question Number : 19 Question Id : 89951416649 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which of the following crystal does not have a centre of symmetry?

- 1. Tetrahedrite
- 2. Tourmaline
- 3. Quartz
- 4. All of the above

Options :

- 89951464991. 1
- 89951464992. 2
- 89951464993. 3
- 89951464994. 4

Question Number : 20 Question Id : 89951416650 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The prismatic, domatic and sphenoidal classes are characteristic of

- 1. Trigonal system
- 2. Triclinic system
- 3. Monoclinic system
- 4. Orthohombic system

Options :

- 89951464995. 1
- 89951464996. 2
- 89951464997. 3

89951464998. 4

Question Number : 21 Question Id : 89951416651 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which of the following denotes a class that has no symmetry at all?

1. Pinacoidal
2. Pedial
3. Domatic
4. Sphenoidal

Options :

89951464999. 1

89951465000. 2

89951465001. 3

89951465002. 4

Question Number : 22 Question Id : 89951416652 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

In the triclinic system all the forms have:

1. 2 faces
2. 4 faces
3. 6 faces
4. None of the above

Options :

89951465003. 1

89951465004. 2

89951465005. 3

89951465006. 4

Question Number : 23 Question Id : 89951416653 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Microscope used to identify minerals and rocks is called:

1. Petrological microscope
2. Biological microscope
3. Con-focal microscope
4. Stereomicroscope

Options :

89951465007. 1

89951465008. 2

89951465009. 3

89951465010. 4

Question Number : 24 Question Id : 89951416654 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Cone of light in the petrological microscope is produced by:

1. Ocular
2. Condenser
3. Eye piece
4. Stage

Options :

89951465011. 1

89951465012. 2

89951465013. 3

89951465014. 4

Question Number : 25 Question Id : 89951416655 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Interference of light is produced by:

1. Polarizer
2. Condenser
3. Analyzer
4. Eye piece

Options :

89951465015. 1

89951465016. 2

89951465017. 3

89951465018. 4

Question Number : 26 Question Id : 89951416656 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Crystals of isometric system are:

1. Shows no refraction
2. Poly refractive
3. Doubly refractive
4. Singly refractive

Options :

89951465019. 1

89951465020. 2

89951465021. 3

89951465022. 4

Question Number : 27 Question Id : 89951416657 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Refractive index of a mineral is determined by:

1. Refractometer
2. Reflectivity meter
3. Potentiometer
4. Goniometer

Options :

89951465023. 1

89951465024. 2

89951465025. 3

89951465026. 4

Question Number : 28 Question Id : 89951416658 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The good example of the mineral which shows twinkling is:

1. Biotite
2. Calcite
3. Kyanite
4. Sillimanite

Options :

89951465027. 1

89951465028. 2

89951465029. 3

89951465030. 4

Question Number : 29 Question Id : 89951416659 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The difference between the two refractive index value is known as:

1. Refractive index
2. Polarization
3. Birefringence
4. Pleochroism

Options :

89951465031. 1

89951465032. 2

89951465033. 3

89951465034. 4

Question Number : 30 Question Id : 89951416660 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Magnification of the interference figure is done by:

1. Plane mirror
2. Convex lens
3. Ocular
4. Bertrand lens

Options :

89951465035. 1

89951465036. 2

89951465037. 3

89951465038. 4

Question Number : 31 Question Id : 89951416661 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Making the centre of rotation of the stage to coincide with the axis of the microscope, which is the intersection of the cross-wires is known as:

1. Centering
2. Focussing
3. Extinction
4. Conoscopic condition

Options :

89951465039. 1
89951465040. 2
89951465041. 3
89951465042. 4

Question Number : 32 Question Id : 89951416662 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Microscope-magnification and resolution in microscope is controlled by:

1. Eye piece
2. Objective
3. Polarizer
4. Analyser

Options :

89951465043. 1
89951465044. 2
89951465045. 3
89951465046. 4

Question Number : 33 Question Id : 89951416663 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Isotropic minerals are:

1. Non-pleochroic
2. Dichroic
3. Trichroic
4. Multichroic

Options :

89951465047. 1
89951465048. 2
89951465049. 3
89951465050. 4

Question Number : 34 Question Id : 89951416664 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Anisotropic minerals are :

1. Non-pleochroic
2. Pleochroic
3. Isotropic
4. Isochroic

Options :

89951465051. 1
89951465052. 2
89951465053. 3
89951465054. 4

Question Number : 35 Question Id : 89951416665 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

Interference colour is observed under:

1. Polariser
2. Condenser
3. Analyser
4. Eye piece

Options :

89951465055. 1

89951465056. 2

89951465057. 3

89951465058. 4

Question Number : 36 Question Id : 89951416666 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Minerals which crystallize in isometric system are:

1. Anisotropic
2. Isochroic
3. Isostatic
4. Isotropic

Options :

89951465059. 1

89951465060. 2

89951465061. 3

89951465062. 4

Question Number : 37 Question Id : 89951416667 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The extinction shown by the minerals parallel to vertical or horizontal cross –wire ---.

1. Straight extinction
2. Vertical extinction
3. Oblique extinction
4. Inclined extinction

Options :

89951465063. 1

89951465064. 2

89951465065. 3

89951465066. 4

Question Number : 38 Question Id : 89951416668 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The extinction shown by the minerals at an angle to vertical or horizontal cross - wire is:

1. Straight extinction
2. Inclined extinction
3. Oblique extinction
4. Vertical extinction

Options :

89951465067. 1

89951465068. 2

89951465069. 3

89951465070. 4

Question Number : 39 Question Id : 89951416669 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Twinning formed at the time of growth of the crystal is:

1. Gliding twins
2. Transformation twins
3. Growth twins
4. Synthetic twins

Options :

89951465071. 1

89951465072. 2

89951465073. 3

89951465074. 4

Question Number : 40 Question Id : 89951416670 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Universal stage is used to determine:

1. Extinction angle
2. Interference colour
3. Pleochroic scheme
4. 2V

Options :

89951465075. 1

89951465076. 2

89951465077. 3

89951465078. 4

Question Number : 41 Question Id : 89951416671 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Quartz wedge is:

1. Optical accessory
2. Field accessory
3. Eye piece accessory
4. Chemical accessory

Options :

89951465079. 1

89951465080. 2

89951465081. 3

89951465082. 4

Question Number : 42 Question Id : 89951416672 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Average crustal abundance of uranium and thorium is:

1. 2 and 50ppm
2. 2 & 8 ppm
3. 10 & 50 ppm
4. 100 & 80 ppm

Options :

89951465083. 1

89951465084. 2

89951465085. 3

89951465086. 4

Question Number : 43 Question Id : 89951416673 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Of the total K present in the earth's crust K^{40} is:

1. 10 % of K
2. 0.1% of K
3. 0.12 % of K
4. 1 % of K

Options :

89951465087. 1

89951465088. 2

89951465089. 3

89951465090. 4

Question Number : 44 Question Id : 89951416674 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Most common oxides of uranium are :

1. Thorianite & Xenotime
2. Samarskite & Uraninite
3. Monazite and Pitchblende
4. Uraninite & Pitchblende

Options :

89951465091. 1

89951465092. 2

89951465093. 3

89951465094. 4

Question Number : 45 Question Id : 89951416675 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Two of the secondary minerals of uranium are

1. Autunite & Thorite
2. Torbernite & Zircon
3. Autunite & Torbernite
4. None of these

Options :

89951465095. 1

89951465096. 2

89951465097. 3

89951465098. 4

Question Number : 46 Question Id : 89951416676 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Singhbhum shear zone has uranium mineralization of :

1. Sandstone type
2. Hydrothermal
3. Unconformity type
4. Albitite type

Options :

89951465099. 1

89951465100. 2

89951465101. 3

89951465102. 4

Question Number : 47 Question Id : 89951416677 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A synthetic gemstone is identical to a natural gemstone in :

1. Appearance
2. Physical properties
3. Chemical properties
4. All the characteristics

Options :

- 89951465103. 1
- 89951465104. 2
- 89951465105. 3
- 89951465106. 4

Question Number : 48 Question Id : 89951416678 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

A synthetic gemstone is made by speeding up natural gem formation process using:

- 1. Temperature
- 2. Pressure
- 3. Chemicals
- 4. All of the above

Options :

- 89951465107. 1
- 89951465108. 2
- 89951465109. 3
- 89951465110. 4

Question Number : 49 Question Id : 89951416679 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which method is used for diamond synthesis?

- 1. HP& HT method
- 2. The flame-fusion process
- 3. Hydrothermal process
- 4. Flux growth method

Options :

- 89951465111. 1
- 89951465112. 2

89951465113. 3

89951465114. 4

Question Number : 50 Question Id : 89951416680 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

CVD processes are widely used in:

1. Diamond synthesis
2. Fabrication of semiconductor devices
3. Manufacture of coatings for wear parts and machine tool components
4. All of the above

Options :

89951465115. 1

89951465116. 2

89951465117. 3

89951465118. 4

Question Number : 51 Question Id : 89951416681 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

CVD processes for diamond synthesis can be used for the growth of:

1. Single crystal forms of the material
2. Polycrystalline forms of the material
3. Both (a) and (b)
4. None of the above

Options :

89951465119. 1

89951465120. 2

89951465121. 3

89951465122. 4

Question Number : 52 Question Id : 89951416682 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Gems are characterized based on:

1. Temperature
2. Pressure
3. Specific gravity
4. Refractive Index

Options :

89951465123. 1

89951465124. 2

89951465125. 3

89951465126. 4

Question Number : 53 Question Id : 89951416683 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The Hardness of diamond on the hardness index is:

1. 10
2. 9
3. 7
4. 8

Options :

89951465127. 1

89951465128. 2

89951465129. 3

89951465130. 4

Question Number : 54 Question Id : 89951416684 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Common species of garnet are recognized by their chemical composition.

1. Four
2. Five
3. Six
4. Seven

Options :

- 89951465131. 1
- 89951465132. 2
- 89951465133. 3
- 89951465134. 4

Question Number : 55 Question Id : 89951416685 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Third-hardest frequently encountered natural gemstone is :

- 1. Diamond
- 2. Chrysoberyl
- 3. Jade
- 4. Coral

Options :

- 89951465135. 1
- 89951465136. 2
- 89951465137. 3
- 89951465138. 4

Question Number : 56 Question Id : 89951416686 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Which one of these is not an organic gem?

- 1. Amber
- 2. Ruby
- 3. Pearl
- 4. Coral

Options :

- 89951465139. 1
- 89951465140. 2
- 89951465141. 3

89951465142. 4

Question Number : 57 Question Id : 89951416687 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

Olivine alters to serpentine on the addition of:

1. H_2O
2. SiO_2
3. Both (1) & (2)
4. H_2O , SiO_2 and CO_2

Options :

89951465143. 1

89951465144. 2

89951465145. 3

89951465146. 4

Question Number : 58 Question Id : 89951416688 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0

The main difference between graphite and diamond is:

1. Composition
2. Hardness
3. Density
4. Crystal structure

Options :

89951465147. 1

89951465148. 2

89951465149. 3

89951465150. 4

Question Number : 59 Question Id : 89951416689 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The most fundamental and common form of pyroxene is :

1. Basal pinacoid
2. Front Pina coid
3. Side Pinacoid
4. Prism

Options :

89951465151. 1

89951465152. 2

89951465153. 3

89951465154. 4

Question Number : 60 Question Id : 89951416690 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The pyroxene that is very characteristic of the HT- HP eclogite facies is:

1. Pigeonite
2. Omphacite
3. Acmit
4. Enstatite

Options :

89951465155. 1

89951465156. 2

89951465157. 3

89951465158. 4