

**Marking Scheme**  
**Strictly Confidential**  
**(For Internal and Restricted use only)**  
**Senior Secondary School Examination, 2026 (XII<sup>th</sup>)**  
**SUBJECT NAME : Geospatial Technology (Q.P. CODE 818/342)**

**General Instructions: -**

<b>1</b>	The CBSE has decided to introduce On Screen Marking (OSM) for the evaluation of Class XII answer Book with the 2026 Examination.
<b>2</b>	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
<b>3</b>	<b>“Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, evaluation done and several other aspects. Its leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in Newspaper/Website, etc. may invite action under various rules of the Board and IPC.”</b>
<b>4</b>	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. <b>However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In Class-XII, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.</b>
<b>5</b>	The Marking scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
<b>6</b>	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
<b>7</b>	Evaluators will mark ( ✓ ) wherever answer is correct. For wrong answer CROSS 'X' be marked. Evaluators will not put right (✓) while evaluating which gives an impression that answer is correct and no marks are awarded. <b>This is most common mistake which evaluators are committing.</b>
<b>8</b>	If a question has parts, please award marks on the right-hand side for each part in the OSM Portal. Marks awarded for different parts of the question will be totaled up by the OSM System.
<b>9</b>	If a question does not have any parts, marks must be awarded in the left-hand margin in the OSM Portal. This may also be followed strictly.
<b>10</b>	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
<b>11</b>	A full scale of marks _____(example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.

<b>12</b>	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper.
<b>13</b>	<p>Ensure that you do not make the following common types of errors committed by the Examiner in the past :-</p> <ul style="list-style-type: none"> <li>Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.)</li> </ul> <p>Half or a part of answer marked correct and the rest as wrong, but no marks awarded.</p>
<b>14</b>	While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.
<b>15</b>	The Examiners should acquaint themselves with the guidelines given in the <b>“Guidelines for Spot Evaluation”</b> before starting the actual evaluation.
<b>16</b>	The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.
<b>17</b>	If a candidate attempts both alternatives/options in a question, where only one option/alternative is required to be attempted, the Evaluator shall award marks in both the options. The system will take the higher of two scores and disregard the other response.
<b>18</b>	In a question having two options/alternatives, if a candidate has attempted only one, then the evaluator shall mark “NA” (Not Attempted) against the option that has not been attempted by the candidate.

**MARKING SCHEME**  
**Geospatial Technology (Subject Code-818)**  
**(PAPER CODE : 342) (P3420818)**

Q. No.	EXPECTED OUTCOMES/VALUE POINTS	Marks
	<b><u>SECTION – A</u></b> <b>(Objective Type Questions)</b>	
<b>1.</b>	<b>Answer any 4 out of the given 6 questions on employability skills.</b>	<b>4X1=4</b>
<b>(i)</b>	(C) Imperative (Unit - 1, Page no.20)	<b>1</b>
<b>(ii)</b>	(A) Self-Confidence (Unit - 2, Page no.38)	<b>1</b>
<b>(iii)</b>	Motivation is derived from the word ‘Motive’. It indicates a directing behaviour towards a certain goal. (Unit - 2, Page no.24)	<b>1</b>
<b>(iv)</b>	(D) Graphic (Unit - 3, Page no.45)	<b>1</b>
<b>(v)</b>	(i) Environmental barriers → Ex. Lack of resources and lack of skilled labour. (ii) Personal barriers → Ex. Self doubt and forming a team and team work. (Unit - 4, Page no.92, 93)	<b>0.5</b> <b>0.5</b>
<b>(vi)</b>	(D) Chief Sustainability Officer (Unit - 5, Page no.113)	<b>1</b>
	<b><u>SECTION – B</u></b> <b>(Subjective Type Questions)</b>	
	<b>Answer any 5 questions out of the given 7 questions on employability skills.</b>	<b>5X1=5</b>
<b>2(i).</b>	(C) Absorption	<b>1</b>
<b>(ii)</b>	(A) Black Body	
<b>(iii)</b>	(D) Shadow	<b>1</b>
<b>(iv)</b>	(B) Stereo	<b>1</b>
<b>(v)</b>	(B) Doppler	<b>1</b>
<b>(vi)</b>	(A) Image Analyst	<b>1</b>
<b>(vii)</b>	(D) TIN	<b>1</b>
	<b>Answer any 6 questions out of the given 7 questions.</b>	<b>6X1=6</b>
<b>3(i).</b>	(A) Cylindrical	<b>1</b>
<b>(ii)</b>	(C) Dissolve	<b>1</b>
<b>(iii)</b>	(A) Database creation	<b>1</b>
<b>(iv)</b>	(D) Divider entire area into regular grids.	<b>1</b>
<b>(v)</b>	(B) Geo - referencing error	<b>1</b>

(vi)	(B) Orbital error	1
(vii)	(C) 15 meter	1
	<b>Answer any 5 questions out of the given 6 questions.</b>	<b>5X1=5</b>
4(i).	(C) Mapping GPS	1
(ii)	(A) Sextant	1
(iii)	(A) 0.5 m	1
(iv)	(B) GPS	1
(v)	(D) Open GIS	1
(vi)	(B) Hazard mapping	1
	<b>Answer any 5 questions out of the given 6 questions.</b>	<b>5X1=5</b>
5(i).	Images	1
(ii)	3	1
(iii)	Node	1
(iv)	Stone	1
(v)	Trilateration	1
(vi)	Mobile	1
	<b>Answer any 5 questions out of the given 6 questions.</b>	<b>5X1=5</b>
6(i).	Geospatial	
(ii)	Surface roughness, slopes , Orientation of the objects related to the radar beam direction (any two) (v) Reliability issues	$\frac{1}{2} + \frac{1}{2}$
(iii)	Map projection is a procedure which transforms the features and locations from a 3D platform (globe) to a 2D platform (map) in a defined and consistent way	1
(iv)	<b>Russian Space Agency</b>	1
(v)	<b>Reliability Issues</b>	1
(vi)	Satellite Images, Topographic maps, census data (any two)	$\frac{1}{2} + \frac{1}{2}$
	<b>Answer any 3 out of the given 5 questions on Employability skills. Answer each question in 20 – 30 words.</b>	<b>3x2=6</b>
7.	Subjective question – Answer may vary according to student. (Unit -1)	$\frac{1}{2} \times 4 = 2$
8.	Importance of positive thinking in life : Answer may vary according to student.	
	(i) A positive thinking makes a person happier, and helps build and maintain relationship.	1+1=2
	(ii) It can help the person make better decisions positive attitude helps improve mental and physical health. (Unit - 2, Page no.24)	

<b>9.</b>	1. Click on Tools and select protect spread sheet.	<b>1/2x4=2</b>
	2. A protect document dialog box appears.	
	3. Type in a password.	
	4. Type the same password in confirm textbox.	
	5. Click on ok.	
	6. Now, when you close the file and open it again, it will ask for the password. Remember this password so, that you can open the file. (Unit - 3, Page no.60)	
<b>10.</b>	(1) Organisational skills refer to the ability of making optional use of one's time, energy and resources to achieve one's goal. (2) The skills include:- Time management, Goal setting, Efficiency, Managing quality. (any two ) (Unit - 4, Page no.104)	<b>1</b> <b>0.5+0.5=1</b>
<b>11.</b>	Some ways are:- (1) Reusing scrap material (2) Ensuring quality control (3) Waste exchange (4) Managing e - waste (5) Use of eco - friendly material (any two) (Unit - 5, Page no.119, 120)	<b>1+1=2</b>
	<b>Answer any 3 questions out of the given 5 questions in 20-30 words.</b>	<b>3X2=6</b>
<b>12.</b>	(i) Leaf pigmentation and leaf cell structure. (ii) Leaf moisture, <b>Crown</b> architecture and plant physiology. (Unit - 1, Page no.9)	<b>1+1=2</b>
<b>13.</b>	(i) Radiometric resolutions describes the ability of a sensor to discriminate very light differences in energy. (ii) The finer the radiometric resolution of a sensor more sensitive it is to defect small differences in reflected or emitted energy. (Examples can be given by situation) (Unit - 1, Page no.16)	<b>1+1=2</b>
<b>14.</b>	(i) It takes too much time in computing time for over laying vector based information. (ii) It cannot represent continuous data. (or any other relevant point) (Unit - 2, Page no.64)	<b>1+1=2</b>
<b>15.</b>	(i) It includes the 24 operational NAVSTAR Satellites that orbit the earth every 12 hours at an altitude of approx 20,200 kilometres. ii) Each Satellite contains several high - precision atomic Clocks and constantly Transmits radio signals using a unique identifying code. (Unit - 3, Page no.104)	<b>1+1=2</b>
<b>16.</b>	(i) It has 3/4 or 7 bands and consists of broad band width from visible to microwave. It's grand sampling is easy. (ii) It is easy to display and clarification. The availability of data is easy. (Unit - 4, Page no.127)	<b>1+1=2</b>

	<b>Answer any 2 out of the given 3 questions in 30 – 50 words each.</b>	<b>2×3=6</b>
<b>17.</b>	<p>(a) Histogram is a graph showing the number of pixel in an image at each different intensity value. Diagram can be given to explain.</p> <p>(b) (i) Linear contrast stretch is the simplest contrast stretch algorithm. The grey values in the original image and the modified image follow a linear relation. (Unit - 2, Page no.20,22)</p> <p>(ii) A density number in the low range of the original histogram is assigned to extremely black and a value at the high end is assigned to extremely white. Diagram can be given to explain. Weightage should be given for diagram and example.</p>	<b>1+2=3</b>
<b>18.</b>	<p>(i) Topology building means -setting rule and behaviours that model how point, lines, and polygons have geometry.</p> <p>(ii) As Topological relationships help in performing analysis modeling network flow ; combining adjacent polygons that have similar features and overlay geographic features.</p> <p>(iii) Topological editing process starts with constructing the topology of the map to be edited.</p> <p>(iv) It ensures that the computer can recognise individual nodes arcs and polygons on the map. (Unit - 2, Page no.71)</p>	<b>1+1+1=3</b>
<b>19.</b>	<p>(i) It will not work in Tunnels, underwater inside the building and needs, clear sky to see satellites.</p> <p>(ii) It gives out coordinates in WGS – 84, must be transformed to local datum.</p> <p>(iii) It produces ellipsoidal not orthometric heights. (Unit - 3, Page no.114)</p>	<b>1+1+1=3</b>
	<b>Answer any 3 out of the given 5 questions in 50 - 80 words each.</b>	<b>3×4=12</b>
<b>20.</b>	<p>(a) To have low wind, clear sky with maximum illumination and minimum shadow to obtain clear weather picture. (Unit – 1, Page no.38)</p> <p>(b) February to April month is optimal period to acquire the aerial photographs.</p> <p>(C) Factors – (any two)</p> <p>(i) Clouds, haze, sunangle, snow.</p> <p>(ii) Distortion due to tips tilt, relief distortion, radial distortion</p> <p>(iii) Storage and handling can be a problem, limited to 0.3 – 0.9 (UV- Nil)</p>	<b>1+1+2=4</b>

21.	Explain any four of the seven image interpretation elements / Keys size, shape, shadow, pattern, association, tone and texture. Use examples to explain. Extra weightage should be given for diagram.	1+1+1+1=4
22.	<p>Raster data structure in GIS is based on grid or pixels. It divides entire area into regular grids in a specific sequence row by row from top left corner. Each grid cell contains a single value. Often coded in ASCII format: Compatible to all digital &amp; satellite images. Easier to interface with remote sensing images.</p> <p>Advantages :- Good for representing continuous surfaces appropriate for R S data, easy to understand draw on screen, quickly processing query, overlay, buffer etc.</p> <p>Disadvantages :- poor at representing discrete features – <b>point</b> lines ,areas accuracy is affected, problem in topological relationships except adjacency, more storage required etc.</p>	1+3
23.	Spatial Overlay is accomplished by joining and viewing together different keys of same area. The result of this combination is creation of new data set that identifies the spatial relationships Raster – Cell by cell process which results in the combination of the two input layer. Vector – Topology must be recreated after joining different layer of point line & polygon. Use clip, intersection and union methods. Extra weightage should be given for examples and diagram.	1+3
24.	<p>(i) These technologies help for efficient, economical and meaningful municipal administration (house tax, water tax, sewage tax etc)</p> <p>(ii) Satellite data helps in creating large scale maps using ground truthing and attribute data collection of property and utility taxes.</p> <p>(iii) GIS based <b>lieborn</b> planning system can be implemented both desktop and web based platform. Haryana state and authorities using such systems municipalities are have access to large scale maps with ultra information.</p> <p>(iv) GIS / MIS tools help in day today administration and maintenance system provides the customized tools for assets inventory for best possible resources.</p> <p>(v) GIS tools help in visualization for future growth in different areas as road – network, water supply, public health, sanitation etc.</p> <p>Weightage should be given to well frame answer with appropriate examples. (Unit – 5, Page no.155)</p>	1+1+1+1=4
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