

# CBSE|DEPARTMENT OF SKILL EDUCATION

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## AUTOMOTIVE (SUBJECT CODE - 404)

### MARKING SCHEME FOR CLASS X (SESSION 2024 - 2025)

Max. Time: 2 Hours

Max.Marks:50

#### General Instructions:

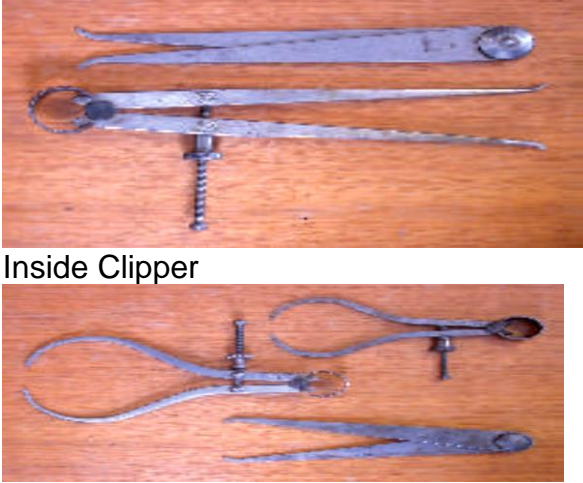
1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
  - i. This section has 05 questions.
  - ii. Marks allotted are mentioned against each question/part.
  - iii. There is no negative marking.
  - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
  - i. This section has 16 questions.
  - ii. A candidate has to do 10 questions.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.

## SECTION A: OBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/PSSCIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Q.1</b>	<b>Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)</b>				
i.	E-mail	NCERT	1/1	6	1
ii.	External	NCERT	2/3	54	1
iii.	Specific Measurable Achievable Realistic Time-bound	NCERT	2/4	55	1
iv.	Ctrl + C	NCERT	3/2	73	1
v.	Turn on	NCERT	3/1	69	1
vi.	All of the above	NCERT	5/2	112	1
<b>Q.2</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks).</b>				
i.	The technician	CBSE	6/2	122	1
ii.	Stroke	CBSE	1/3	12	1
iii.	Handle	CBSE	1/2	7	1
iv.	Car wash soap	CBSE	3/1	82	1
v.	Finding the direction	CBSE	5/1	110	1
vi.	Friction	CBSE	1/4	18	1
<b>Q.3</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks).</b>				
i.	Cooling The Engine	CBSE	1/5	19	1
ii.	Highest	CBSE	1/6	23	1
iii.	Transmit	CBSE	1/7	31	1
iv.	Structural	CBSE	1/8	35	1
v.	VIT – Vehicle Identification Number	CBSE	6/2	121	1
vi.	TPMS – Tyre Pressure Monitoring System	CBSE	5/1	111	1
<b>Q.4</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks).</b>				
i.	To move the vehicle in desired direction.	CBSE	1/9	37	1
ii.	Behind	CBSE	1/11	43	1
iii.	Pneumatic	CBSE	1/12	46	1
iv.	The working speed of engine.	CBSE	2/3	73	1
v.	Paper	CBSE	3/3	89	1
vi.	Eye Contact	CBSE	4/1	99	1
<b>Q.5</b>	<b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks).</b>				
1.	Used	CBSE	1/10	41	1
2.	Tightening the nut	CBSE	2/1	63	1
3.	Feel good factor	CBSE	4/1	99	1
4.	Development	CBSE	5/1	110	1
5.	Hammer	CBSE	2/1	67	1
6.	Dirt and Debris	CBSE	3/4	94	1

## SECTION B: SUBJECTIVE TYPE QUESTIONS

Q. No.	QUESTION	Source Material (NCERT/ PASSIVE/ CBSE Study Material)	Unit/ Chap. No.	Page no. of source material	Marks
<b>Answer any 3 out of the given 5 questions Employability skills in 20-30 words each (2 x 3 = 6 marks).</b>					
<b>Q.6</b>	Verbal communication includes sounds, words, language, and speech. Speaking is one of the most effective and commonly used ways of communicating. Ex. Board meetings, Election campaigns, Two friends discussing homework.	NCERT	1/2	7	2
<b>Q.7</b>	T-Titles (Capitalise the first letter in the titles used before people's names.) I-word 'I'(Capitalise the letter 'I' when it is used as a word) N- Names (Capitalise the first letter in the names of people, places, days and months.) S-Starting letter of sentences (Capitalise the first letter in every sentence.)	NCERT	1/6	25	2
<b>Q.8</b>	Self-motivation is what pushes us to achieve our goals, feel happy and improve our quality of life. In other words, it is our ability to do the things that need to be done without someone or something influencing us. Ex. Internal Motivation: LOVE External Motivation: REWARD	NCERT	2/3	51	2
<b>Q.9</b>	1. They are confident. They believe in themselves and their abilities. 2. They keep trying new ideas in their business. 3. They are patient.	NCERT	4/1	84	2
<b>Q.10</b>	CTRL+x — cut CTRL+v — paste	NCERT	3/2	73	2
<b>Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)</b>					
<b>Q.11</b>	This is the volume swept by the piston in moving from T.D.C. to B.D.C. If 'd' is the cylinder bore and 'S' the stroke, the piston displacement, $V_s$ , is given by $V_s = \pi/4 d^2.s$ This is also called 'swept volume'.	CBSE	1/3	12	2
<b>Q.12</b>	1. Water pump - A water pump to circulate the coolant. 2. Thermostat- A thermostat to control the temperature of the coolant. 3. The Radiator- A radiator to cool the coolant.	CBSE	2/2	71	2

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	4. Pressure Cap & Reserve Tank - A radiator cap to control the pressure in the system, and some plumbing, consisting of interconnecting hoses to transfer the coolant from the engine to radiator.				
Q.13	<p>A caliper is a device used to measure the distance between two opposing sides of an object. The tips of the caliper are adjusted to fit across the points to be measured, the caliper is then removed and the distance read by measuring between the tips with a measuring tool, such as a Ruler. As shown in fig.</p>  <p>The image shows two types of calipers. The top one is an inside caliper, which has two long, thin legs with pointed tips and a central screw mechanism for adjusting the distance between the tips. The bottom one is an outside caliper, which has two long, thin legs with curved tips and a central screw mechanism for adjusting the distance between the tips.</p> <p>Inside Clipper</p> <p>Outside Clipper</p>	CBSE	2/2	77	2
Q.14	<p><b>Material and tools requirement for changing of the oil.</b></p> <ol style="list-style-type: none"> <li>1. Engine Oil (4 or 5 liters – check the vehicle’s service manual)</li> <li>2. New oil filter - check vehicle’s service manual</li> <li>3. Safety glasses and rubber gloves</li> <li>4. Plastic container and funnel</li> <li>5. Car jack and jack stands</li> <li>6. Drain plug socket wrench</li> <li>7. Paper towels and a rag</li> <li>8. Oil filter wrench</li> </ol>	CBSE	3/2	77	2
Q.15	<p>Content of Service Manual:</p> <ol style="list-style-type: none"> <li>1. Index and Page No.</li> <li>2. Instructions to use the service manual.</li> <li>3. Expanded view of assembly Scheduled maintenance tasks.</li> <li>4. Standard shop practices and safety.</li> <li>5. Complete detail of spare parts including</li> </ol>	CBSE	6/1	118	2

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	<p>their part number.</p> <p>6. Dismantling and assembly sequences and procedure of all systems like engine, Transmission, differential, brake etc.</p> <p>7. Standard tolerances, adjustment and serviceability of each component</p> <p>8. Use of special-purpose tools and equipment</p>				
<b>Q.16</b>	<p>Modern service workshop deploys important workshop machine for handling and servicing of a vehicle. These machines make work very systematic and comfortable to mechanic. Common equipment fitted in the workshops are Two Post lift, Air compressor, Wheel balancer, Bench vice, Work tables, Bench grinder, Oil draining &amp; Filling equipment, Cooling system tester, BC clamp meter, Coolant tester, Battery &amp; Charging system tester, Diagnostic tool, Pneumatic tools and many other tools. So, it is necessary to service and also testing the vehicle in the service workshop.</p>	CBSE	2/5	77	2
<b>Answer any 3 out of the given 5 questions in 80-100 words each (4 x 3 = 12 marks)</b>					
<b>Q.17</b>	<p>An automotive battery is an electrochemical device capable of producing electrical Energy. It has several important functions which are as follows:</p> <ol style="list-style-type: none"> <li>1. It operates the starting motor, ignition system, electronic fuel injection, and other Electrical devices for the engine during cranking and starting.</li> <li>2. It supplies all the electrical power for the vehicle accessories whenever the engine is not running or when the vehicle's charging system is not working.</li> <li>3. It acts as a stabilizer of voltage for the entire automotive electrical system.</li> <li>4. It stores energy for an extended time.</li> </ol>	CBSE	1/14	51	<b>4</b>
<b>Q.18</b>	<p>Proper steps for manually cleaning a vehicle:.</p> <ol style="list-style-type: none"> <li>1. a shady spot should be chosen, preferably away from trees so that the car doesn't get leaves etc.</li> <li>2. All the doors and windows should be</li> </ol>	CBSE	3/1	83	<b>4</b>

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	<p>closed.</p> <ol style="list-style-type: none"> <li>3. Take a bucket of clean water and pour one full spoon of car soap.</li> <li>4. Remove the dirt from the car, starting at the roof and getting down to the tyres. take a sponge or terry cloth piece in the bucket of soapy water and sponge the roof of the car.</li> <li>5. Spray off excess soap when the entire roof has been cleaned.</li> <li>6. Clean the tyre sidewalls with a plastic brush.</li> <li>7. Clean the car with the water pipe properly, so that, there is no soap or dirt spot.</li> <li>8. Take an old towel and dry the car thoroughly by setting the towel flat against the surface of the car and dragging it along the surface to pick up any water spots. Start from the roof and work your way down to the tyres.</li> <li>9. For cleaning the windows use pieces of newspaper on both the inside and the outside of the windows. Rub and clean metal or chrome parts so that there are no water spots.</li> </ol>				
<b>Q.19</b>	<p>Important aspects of customer service.</p> <ol style="list-style-type: none"> <li>1. Know your product: Know what products/service you are offering. In other words, be an Information expert. It is okay to say 'I don't know', but it should always be followed up by "but let me find out" or possibly "but my friend knows!" Whatever the situation may be, make sure that you don't leave your customer with an unanswered question.</li> <li>2. Body Language/Communication: Most of the communication that we relay to others is done through our body language. If we have a negative body language when we interact with others it can show our lack of care. Two of the most important aspects of positive body language are smiling and eye contact. Make sure to look your customers in the eye. It shows that we are listening to them. And then of course, smiling</li> </ol>	CBSE	4/1	99	<b>4</b>

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	<p>makes the conversion more positive.</p> <p>3. Anticipate Guest Needs: Nothing surprises your customer more than an employee going the extra mile to help them. Always look for ways to serve your customers in more ways than they expect. In doing so it helps them to know that you care and it will leave them with the "Feel Good Factor" that we are searching for.</p>				
Q.20	<ol style="list-style-type: none"> <li>1. Antilock brakes- They help maintain control while stopping, as well as throw the door open to stability control and roll mitigation technologies.</li> <li>2. Airbag- Airbags have graduated from things that simply blast out of the dashboard to more advanced devices that protect you in a rollover, cushion your knee and adjust for smaller drivers. They can also determine the severity of the impact, your seat position and whether you're wearing a seat belt.</li> <li>3. Key fobs- Fobs now unlock doors, set off the horn and lights if you lose the car in the MegaMart parking lot and, in some cases, mean you don't have to use a key at all.</li> <li>4. Fold-flat rear seats- Seats that tuck out of the way are so much easier to deal with than those that have to be removed.</li> <li>5. Electronic stability systems- A computerized system that applies the car's brakes or cuts the throttle, or a little of both, to keep the car going where you want it to.</li> <li>6. DVD players-</li> <li>7. Heated and cooled seats</li> <li>8. Hybrid drive trains- Tilt steering wheels have been around for a long time.</li> <li>9. Navigation systems</li> <li>10. Tilt/telescoping steering wheels and adjustable pedals.</li> </ol>	CBSE	5/5	107	4
Q. 21	<p>Innovations leads to development of a technology. With the development of new technologies, the customers get benefits in term of comfort and safety. There is a lot of</p>	CBSE	5/1	104	4

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	<p>research going on in the area of alternative fuels due to economic and environmental concern. Even solar energy based cars have been designed these days. And these cars can go up to 80 km in a day. Some cars have been designed to use electrical energy.</p> <p>A combination of electrical and petrol energy has been used in cars called 'hybrid' cars.</p> <p>Technological developments of design, innovation and chassis have led to the development of MPFI system which gives more mileage per liter of fuel. In major auto companies of the world there are large teams working on new developments and innovations. It is a continuous process involving lots of experimentation. Very highly qualified engineers and scientists work on such projects.</p> <p>Innovations require lead-time. Bringing a new model to market typically requires 5-7 years in laboratories, proving grounds and production facilities, while a brand new Technology takes longer.</p>				