

CBSE | DEPARTMENT OF SKILL EDUCATION

AUTOMOTIVE (SUBJECT CODE 404)

Marking Scheme for Sample Question Paper Class X (Session 2020-2021)

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. 1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	
i.	Non - verbal communication	1
ii.	Stress Management refers to focusing human efforts for maintaining a healthy body and mind capable of better withstanding stressful situations.	1
iii.	Recycle bin	1
iv.	b. Mathsite.tmp	1
v.	Women	1
vi.	d. All of the above.	1

Q. 2	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Channel section	1
ii.	d. Both (a) and (b)	1
iii.	This is the volume swept by the piston in moving from T.D.C. to B.D.C. This is also called 'swept volume'.	1
iv.	Relative change of viscosity with temperature is called viscosity index.	1
v.	a. Surface area of metal in contact with air. b. Mass flow rate of air. c. Temperature difference between the heated surface and air. d. Conductivity of metal used for engine. (Any 2)	1
vi.	Placing the fuel tank necessarily over the carburetor is a disadvantage.	1

Q. 3	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Universal joint is used where two shafts are connected at an angle to transmit torque.	1
ii.	Stub axle	1
iii.	a. Mechanical linkage type steering system b. Power steering system	1
iv.	c. 90°	1
v.	A phenomenon in which the highly cambered leaf springs exhibit movement about the vertical axis is known as yawing.	1
vi.	Bounce.	1

Q. 4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	<u>Flywheel puller:</u> A proper flywheel puller is the only correct and safe way to remove a flywheel from engine. Without using the recommended tool, there are chances of damaging the flywheel which could lead to a potential reliability issue.	1
ii.	Dry	1
iii.	d. 50,000 km	1
iv.	b. Reduces	1
v.	Dealers	1
vi.	Customer service is a series of activities designed to enhance the level of customer satisfaction that is, the feeling that a product or service has met the customer expectation before, during and after a purchase.	1

Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	c. Sales Manager	1
ii.	Company R&D is a highly valuable intellectual property and so engineers work under top-secret security as the first company to come to market with a new technology can gain market share.	1
iii.	c) Both (a) and (b)	1
iv.	- 40 degrees to 130 degrees	1
v.	Owner's manual.	1
vi.	Service manual.	1

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

Q. 6	Parts of speech are as follows: (Any 4) a. Verb b. Noun c. Adverb d. Adjective e. Pronoun f. Preposition g. Conjunction h. Interjection	2
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Q. 7	<p><u>a. Physical Exercise</u> When stress affects the brain, rest of the body also feels the impact. Physical exercise in the form of walking, skipping or for that matter indulging in any sports has been found to relieve stress as they stabilize mood, improve self-esteem and induce sleep.</p> <p><u>b. Yoga</u> Yoga is a school of Hindu philosophy that reduces stress. Yoga includes a series of postures and breathing exercises practiced to achieve control of body and mind.</p>	2
Q. 8	<p>a. Infected files b. Infected pen drives c. Infected CD/ DVD -ROMs d. Through infected file attachment of e-mails</p>	2
Q. 9	<p><u>a. Hard working:</u> In order to be successful, an entrepreneur must be very hard working. Successful entrepreneurs adapt to the habit of hard work from a very early stage.</p> <p><u>b. Optimistic:</u> Successful entrepreneurs should have a positive approach to life. They should not be afraid of any adverse situations in business. They should think optimistically about the future of the business.</p>	2
Q. 10	<p><u>Deforestation:</u> Due to increase in population the need for building houses has emerged. To overcome this challenge more and more houses are built in hilly regions due to which trees are cut. Also, in order to maintain the life style, lot of forests has been cut. With increasing deforestation, problem related to climate change has risen in past few decades. Many species of birds and other animals are on verge of extinct due to changing climatic conditions.</p>	2

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q. 11	<p>a. The tubeless tyres are lighter and run cooler than tube tyre. b. It retains air for a long period even after being punctured by nail, provided the nail remains in the tyre. c. Any hole in the tubeless tyre can be repaired simply by rubber plugging. d. It can be retreated in the same manner as the tube tyre. (Any 2)</p>	2
Q. 12	<p>a. Brakes should work equally well in all weathers. b. It should have very few wearing parts. c. It should require little maintenance. d. Brakes, when applied should not disturb steering geometry. e. There should be minimum sound when brakes are applied. (Any 4)</p>	2
Q. 13	<p>These tools are special in nature and does the special purpose work. Use of these tools makes work easy and save time.</p>	2
Q. 14	<p>a. Pneumatic wrenches that is made from premium quality raw material. b. This type of wrenches are used for accuracy and easy operations, mostly in workshops, power plants, mining & cement industries, railways industries, fertilizers/ chemicals and so on. c. These are used where accurate torque is required on a nut and bolt. d. These wrenches are operated electrically.</p>	2

Q. 15	Material and tools requirement for changing of the oil and oil filter are: a. Engine Oil (4 or 5 liters – check the vehicle’s service manual) b. New oil filter - check vehicle’s service manual c. Safety glasses and rubber gloves d. Plastic container and funnel e. Car jack and jack stands f. Drain plug socket wrench g. Paper towels and a rag h. Oil filter wrench (Any 4)	2
Q. 16	Contents of service manual are as follows: a. Index b. How to use service manual c. Periodic maintenance activities d. Standard shop practices and safety e. List of spare parts and their part number f. Disassembly and assembly procedures of different units like engine, gearbox etc. g. Standard tolerances, adjustment and serviceability of each component h. Testing procedure and workability (Any 4)	2

Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)

Q. 17	It has several important functions which are as follows: a. It operates the starting motor, ignition system, electronic fuel injection, and other electrical devices for the engine during cranking and starting. b. 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. c. It acts as a stabilizer of voltage for the entire automotive electrical system. d. It stores energy for extended period of time.	4
Q. 18	Steps <u>a. Obtain the correct replacement filter:</u> It should be the same as the one you will replace. Consult your vehicle service manual or auto parts store if you need assistance finding the right part. <u>b. Secure the vehicle:</u> Park the car on level ground and apply the parking brake. Shift into first gear (manual transmission) or Park (automatic transmission) and turn off the ignition. <u>c. Open the bonnet (hood):</u> Release the bonnet with the lever inside the car. Move the exterior bonnet catch for final release. Lift the bonnet and secure it with the prop rod. <u>d. Locate the air filter:</u> Air filter is located on the top of engine. <u>e. Remove the air filter cover:</u> Loosen the hose clamp that seals the air conduct. Undo all the screws holding the air filter cover. Some models have wing nuts, other air filters are just clamped on with a quick release system. Keep screws and other parts together and in a safe location so you can find them later. Pull the cover out of the air conduit and lift it up so it comes off the lower part of the housing. <u>f. Take out the air filter:</u> Now you can see a round or rectangular filter made of cotton, paper or gauze. Filters have a rubber rim that seals off the unit's interior. Simply lift the filter out of the housing.	4

	<p><u>g. Clean the air filter housing:</u> Connect the air hose to the compressor and use the compressed air to blow out the dust, or use a vacuum cleaner to suck up any dirt. Seal the air conduit with removable adhesive tape. It only takes a minute and that way you won't get any dirt into the engine whilst cleaning.</p> <p><u>h. Replace the filter:</u> Replace the old filter with a new one. Simply insert it into the housing with the rubber rim facing up. Make sure the edges are sealed by the rubber rim.</p> <p><u>i. Replace the cover:</u> Carefully insert the cover back into the air conduit and then press the entire piece down onto the lower half of the air filter unit. Make sure it's on straight and securely, otherwise you could alter the engine's performance.</p> <p><u>j. Tighten all the screws or clamps:</u> recheck that you have put everything firmly back together by rocking the unit gently with both hands.</p> <p><u>k. Shut the bonnet securely.</u></p>	
Q. 19	<p>One of the most important aspects of customer service is that of what is often referred to as the Feel Good Factor. Basically the goal is to not only help the customers have a good experience, but to offer them an experience that exceeds their expectations.</p> <p>Several key points are listed as follows:</p> <p><u>a. Know your product:</u> 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.</p> <p><u>b. Body Language/Communication:</u> 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 makes the conversation more positive.</p> <p><u>c. Anticipate Guest Needs:</u> Nothing surprises your customer more than an employee going the extra mile to help them. Always look for ways to serve your customer 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>	4
Q. 20	<ul style="list-style-type: none"> a. Antilock brakes b. Airbag advancements c. Key fobs d. Fold-flat rear seats e. Electronic stability systems f. DVD players g. Heated and cooled seats h. Tilt/telescoping steering wheels and adjustable pedals i. Navigation systems j. Hybrid drive trains 	4

Q. 21	<u>Sensitive air bag systems:</u> In older model cars, the airbag deploys when a front-end crash occurs. However, many of today's vehicles come equipped with more sensitive air bag systems, which sense the difference in the size and weight of the occupants and deploys the air bags accordingly. This technology may even be able to detect that an individual is not wearing a seat belt or that he or she is positioned abnormally in the seat and compensate the air bag deployment to accommodate this.	4
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