

CBSE | DEPARTMENT OF SKILL EDUCATION

AUTOMOTIVE (SUBJECT CODE: 804)

Blue-Print for Sample Question Paper for Class XII (Session 2023-2024)

Max. Time: 3 Hours

Max. Marks: 60

PART A - EMPLOYABILITY SKILLS (10 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	
1	Communication Skills- IV	1	1	2
2	Self-Management Skills- IV	2	1	3
3	Information and Communication Technology Skills- IV	1	1	2
4	Entrepreneurial Skills- IV	1	1	2
5	Green Skills- IV	1	1	2
TOTAL QUESTIONS		6	5	11
NO. OF QUESTIONS TO BE ANSWERED		Any 4	Any 3	07
TOTAL MARKS		1 x 4 = 4	2 x 3 = 6	10 MARKS

PART B - SUBJECT SPECIFIC SKILLS (50 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANS. TYPE QUES.- I	SHORT ANS. TYPE QUES.- II	DESCRIPTIVE/ LONG ANS. TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	3 MARKS EACH	4 MARKS EACH	
1	Measuring and Service Equipment	6	1		1	8
2	Steering System	6	1		1	8
3	Suspension System	7	1		1	9
4	Transmission and Final Drive system	4	1	1	1	7
5	Automotive Electrical and electronic system	4		1	1	6
6	Motor Vehicle Act and Rules	5	1	1		7
TOTAL QUESTIONS		32	5	3	5	45
NO. OF QUESTIONS TO BE ANSWERED		26	Any 3	Any 2	Any 3	34
TOTAL MARKS		1 x 26 = 26	2 x 3 = 6	3 x 2 = 6	4 x 3 = 12	50 MARKS

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Max. Time: 3 Hours

Max. Marks: 60

General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **24 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 (6 + 18 =) 24 questions, a candidate has to answer (6 + 11 =) 17 questions in the allotted (maximum) time of 3 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (30 MARKS):**
 - i. This section has 06 questions.
 - ii. There is no negative marking.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (30 MARKS):**
 - i. This section contains 18 questions.
 - ii. A candidate has to do 11 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.	Shyam has feelings of emptiness, abandonment. Name the type of personality disorder he has.	1
ii.	Gregarious, assertive and sociable fall under _____ type of personality trait. a) agreeableness b) conscientiousness c) extraversion d) openness to experience	1
iii.	What is Communication?	1
iv.	A _____ is an arrangement of cells in a horizontal manner. a) column b) row c) cell d) worksheet	1
v.	Ramesh has a rug business in India. He wants to start exporting rugs to Canada but does not know if they would sell there. The barrier he is facing is _____.	1
vi.	If Prashant is working as RWHE means he is _____ a) Road Waste Helping Engineer b) Rain Water Harvesting Engineer c) Risk Wind Helper Engineer d) Row Water Harvesting Engineer	1

Q. 2	Answer any 5 out of the given 7 questions (1 x 5 = 5 marks)	
i.	_____ are used for vehicle tyre inflation, deflation and checking up the air pressure a) Tyre inflators b) Pressure gauge c) Manometer d) Barometer	1
ii.	A manual car washer consists of a/an _____ which moves the crank and piston with the help of a V-belt.	1
iii.	_____ uses a slotted rotor with varied blade placement to guide air into the chamber and compress the volume. a) Piston type compressor b) Vane type compressor c) Rotary type compressor d) Screw type compressor	1
iv.	If the top of a wheel is not tilted in either direction, it is known as _____. a) positive camber b) zero camber c) negative camber d) wheel rake	1
v.	The angle between the king pin Centre line (steering axis) and the vertical, in the plane of wheel is known as _____.	1

vi.	The front axle beam is connected to the steering knuckles with the help of kingpin in _____. a) rigid type suspension b) independent suspension c) McPherson strut type suspension d) Wishbone type suspension	1
vii.	_____ type of joint is used to transfer power through inclined shafts. a) Universal joint a) Hinge joint b) Ball and socket joint c) Pivot joint	

Q. 3	Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)	
i.	If the flow of air through the compressor is parallel to its axis, then the compressor is _____. a) reciprocating compressor b) centrifugal compressor c) axial flow compressor d) turbo-compressor	1
ii.	While viewing from top, if the front end of the front wheels of a vehicle are towards inside whereas the rear ends are apart, the configuration is known as _____. a) Toe-out b) Toe-in c) Positive camber d) Positive castor	1
iii.	Leaf springs absorb road shocks by _____.	1
iv.	Movement of the car's longitudinal centerline to the right and left, in relation to the car's center of gravity is called _____. a) pitching b) rolling c) bouncing d) yawing	1
v.	The starting system of a modern diesel/ petrol has _____ volt system in it.	1
vi.	For a new commercial vehicle, the initial fitness certificate is valid for _____. a) 2 years b) 5 years c) 10 years d) 15 years	1
vii.	_____ pollutant can also be defined as soot or smoke made up of particles in the micron range. a) Sulphur oxide b) Particulate matter c) Hydrocarbons d) Volatile organic compound	

Q. 4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	_____ is provided on the spark plug cleaning and testing equipment to record the pressure applied during the gap test. a) Ammeter b) Voltmeter c) Pressure gauge d) Sensor	1
ii.	The Centre of rotation should be common to all the four wheels. This is known as_____ a) Ackerman's Steering Principle. b) Principle of positive displacement c) Principle of Differential d) Principle of TIRRL	1
iii.	Maximum inclination angle of propeller shaft fitted with Hooke's Joint (cross or spider type Joint) is_____.	1
iv.	Coil springs are made up of _____. a) Mild steel b) Carbon steel c) High speed steel d) Spring steel	1
v.	Write any type of Road safety sign.	1
vi.	_____pollutant reduces the blood's ability to carry oxygen. a) Sulphur oxides (SOx) b) Carbon monoxide (CO) c) Nitrogen oxides (NOx). d) Hydrocarbons	1

Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Often an unbalance of forces is produced in rotary or reciprocating machinery due to the _____ a) centripetal forces b) centrifugal forces c) friction forces d) inertia forces	1
ii.	In electronic power steering, a magnet and a magnet torque sensor are mounted at the end of the_____ a) pitman arm b) tie rod c) axle d) steering shaft	1
iii.	The lowering of the front end of the vehicle along with a raising of the rear end during braking is known as _____. a) Bounce b) Jounce c) rebound d) dive	1
iv.	In four wheel drive and rear wheel drive vehicles, it is the _____ that transmit the driving force generated by the engine to the driving wheels.	1

v.	In DC generator, the voltage fluctuation has been reduced to almost nil by increasing number of _____ in series.	1
vi.	The duplicate fitness certificate can be issued in case of _____. a) selling the vehicle b) loss, theft or mutilation c) transfer of ownership d) interstate transfer	1

Q. 6	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Centrifugal blower is one of the form of _____ air compressor?	1
ii.	The amount of camber angle is generally kept between _____. a) 0 – 2° b) 0 – 4° c) 0 – 6° d) 0 – 8°	1
iii.	The _____ refers to the weight which is supported by the suspension springs. a) Un-sprung weight b) sprung weight c) clip on lead weight d) counter weight	1
iv.	_____ joint is a form of a mechanical connection between two shafts and allows angular movement of one or both shafts. a) Ball b) Universal c) Slip d) Tripod	1
v.	In alternators, _____ allows the current to pass through them in only one direction. a) stator b) rotor c) diode d) slip ring	1
vi.	A vehicle can be driven or allowed to be driven in public place only after registration by registering authority as under the provision of section _____ of motor vehicle Act 1988.	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. 7	Why is active listening important in our day to day life?	2
Q. 8	Enlist any four parameters that describe an individual's personality.	2
Q. 9	Give different steps to start Libre Office Impress.	2
Q. 10	Write any four characteristics of entrepreneurship.	2
Q. 11	What is Eco-Tourism?	2

Answer any 3 out of the given 5 questions in 20 – 30 words each (2 x 3 = 6 marks)

Q. 12	Define sprung and un-sprung weight with a sketch.	2
Q. 13	Write down the function and main components of a car washer.	2
Q. 14	Give the main advantage and major components of a hydraulic power steering system.	2
Q. 15	Write (any two) main functions of propeller shaft.	2
Q. 16	Define emission. Enlist (any two) sources of emission.	2

Answer any 2 out of the given 3 questions in 30– 50 words each(3 x 2 = 6 marks)

Q. 17	Enlist the different forms and documents required to obtain: a) A learner's license b) Permanent driving license	3
Q. 18	Outline the requirements of a modern universal joint. Explain any one.	3
Q. 19	Explain the working principle of starter motor or self-starter of an automobile.	3

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

Q. 20	Describe electronic power steering (EPS) system.	4
Q. 21	Make a list of different applications of an air compressor in automobile industry.	4
Q. 22	Christopher observed that his car has uneven tyres, bad vibrations, bumpy rides, nose diving and the stopping was taking longer duration. He went to the workshop. The technician explained to him that the shock absorbers don't bound and rebound. Explain "bound" and "rebound" actions of a shock absorber.	4
Q. 23	Explain three quarter floating type rear live axle system with suitable diagram.	4
Q. 24	Explain purpose of fitment of automotive electrical system.	4