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CCE RR

NSQF LEVEL-2

**KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESHWARAM,
BANGALORE – 560 003**

NSQF LEVEL-2 EXAMINATION, MARCH/APRIL, 2022

MODEL ANSWERS

Date : 08. 04. 2022]

CODE NO. : **88-EK**

Subject : Automobile

(English Medium)

(Regular Fresh & Regular Repeater)

[Max. Marks : 60

Qn. Nos.	Value Points	Total
I.	<i>Four</i> choices are given for each of the following questions / incomplete statements. Choose the correct answer and write the complete answer along with its question number and its letter of alphabet : $10 \times 1 = 10$	
1.	The relation between Indicated Horse Power (I.H.P.), Brake Horse Power (B.H.P.) and Friction Horse Power (F.H.P) is (A) I.H.P = B.H.P + F.H.P (B) I.H.P = B.H.P – F.H.P (C) I.H.P = F.H.P – B.H.P (D) I.H.P = B.H.P/F.H.P Ans : (A) I.H.P = B.H.P + F.H.P	1
2.	The compression ratio of diesel engine is (A) 8 to 9.5 (B) 9.5 to 8 (C) 16 to 22 (D) 22 to 16 Ans : (C) 16 to 22	1
3.	Observe the analogy and choose the correct answer Solid lubricant : Graphite : : Semisolid lubricant : (A) Animal oils (B) Palmitic acid (C) Commercial grade oils (D) Aluminium paste Ans : (D) Aluminium paste	1

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[Turn over

Qn. Nos.	Value Points		Total
4.	The unit fitted to the charging circuit is (A) Alternator (B) Ignition coil (C) Cut-out unit (D) Spark plug Ans : (C) Cut-out unit		1
5.	Multimeter is a/an (A) Special tool (B) Electrical tool (C) Hand tool (D) Measuring tool Ans : (B) Electrical tool		1
6.	The equipment used in an automobile service workshop to increase the pressure of air by reducing its volume is (A) Pneumatic wrenches (B) Wheel balancer (C) Air compressor (D) Two-post lift Ans : (C) Air compressor		1
7.	Coolant is used for (A) cooling the engine (B) freezing the engine (C) heating the engine (D) firing the engine Ans : (A) cooling the engine		1
8.	The part of the vehicle cleaned by using newspaper is (A) bonnet (B) windows (C) tyres (D) roof Ans : (B) windows		1
9.	The tool used to check the oil level in the engine is (A) Screw driver (B) Micrometer (C) Steel rule (D) Dip stick Ans : (D) Dip stick		1
10.	Passive keyless entry system was first designed by (A) General Motors (B) Mercedes-Benz (C) Honda (D) Saturn Ans : (A) General Motors		1
II.	Fill in the blank with suitable answer : $4 \times 1 = 4$		
11.	The minimum temperature at which the oil will pour is called Ans : Pour point		1

Qn. Nos.	Value Points		Total																
12.	Hydrometer is used for measuring Ans : specific gravity		1																
13.	Clogged filter fuel pressure. Ans : reduces		1																
14.	Hypoid gears are widely used for drive. Ans : final		1																
III.	Uses of hand tools are given in Column-A and hand tools are given in Column-B . Match them and write the answer along with its letter of alphabet. $4 \times 1 = 4$																		
15.	Match the following : <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Column-A</td> <td style="text-align: center;">Column-B</td> </tr> <tr> <td>i) Create cylindrical holes</td> <td>a) snips</td> </tr> <tr> <td>ii) Cut sheet metals</td> <td>b) file</td> </tr> <tr> <td>iii) To hold small objects</td> <td>c) drill bits</td> </tr> <tr> <td>iv) For sharpening tools</td> <td>d) chisel</td> </tr> <tr> <td></td> <td>e) pliers</td> </tr> <tr> <td></td> <td>f) grinding machine</td> </tr> <tr> <td></td> <td>g) punch</td> </tr> </table> Ans : i) c) drill bits ii) a) snips iii) e) pliers iv) f) grinding machine	Column-A	Column-B	i) Create cylindrical holes	a) snips	ii) Cut sheet metals	b) file	iii) To hold small objects	c) drill bits	iv) For sharpening tools	d) chisel		e) pliers		f) grinding machine		g) punch	1 1 1 1	4
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IV.	Answer the following questions : $6 \times 1 = 6$																		
16.	Classify the types of automobile engine based on their arrangement of cylinders. Ans : i) Inline vertical engine ii) Horizontal engine iii) V-type engine iv) Opposed cylinder engine v) Radial engine	$2 \times \frac{1}{2}$	1																

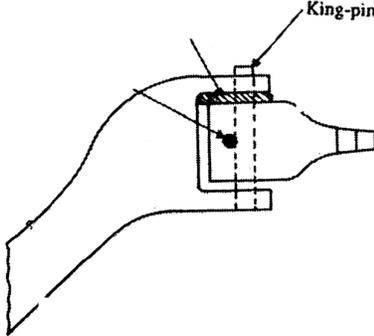
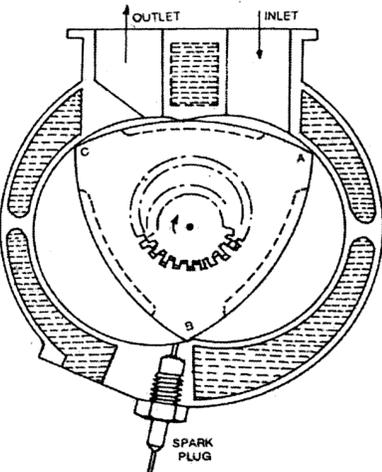
Qn. Nos.	Value Points		Total
17.	Write the principles of suspension system. Ans : i) To restrict road vibrations ii) To protect the passengers form road shocks iii) To maintain stability of vehicle.	1×1	1
18.	Mention the uses of brake light and side lights. Ans : Break light : Indicates the other road users behind it Side lights : Used for parking purpose.	2×½	1
19.	Name the companies adopted electronic stability system in cars in 95 models. Ans : i) BMW ii) Mercedes-Benz.	2×½	1
20.	What are the two precautions to be taken during manually washing a vehicle ? Ans : i) Wear old clothes ii) Soap dries fast Wash one side at a time iii) Do not use detergent Use car wash soap only.	2×½	1
21.	Mention the materials and tools required for changing the coolant. Ans : i) Pan ii) Coolant iii) Spanner.	2×½	1

Qn. Nos.	Value Points		Total
V.	Answer the following questions : 6 × 2 = 12		
22.	Mention the functions of alternator. OR Mention the functions of the front axle. Ans : i) Produces alternating current when the engine is running. ii) Converts A.C. To D.C. iii) It is the source of electricity in automobile. iv) Charges the battery when the engine is running.	2×1	2
	OR		
	Ans: i) It carries the weight of the front of the vehicle. ii) It carries stub axle, king pin steering arm. iii) It carries the brake system iv) It controls the ride through shock absorber fitted on it. v) In case of a four wheel drive, it also transmits power to road wheels.	2×1	2
23.	Explain the following automobile body parts : (i) Hood (ii) Bumpers. Ans : i) Hood : Made in a single piece hinged at the rear to cover the engine compartment. ii) Bumpers : The rear and front bumpers consist of a single bar provided with two ornaments. The rear and front bumper secured by screws. The front bumper is secured through the ornament stud screws and nut in two brackets welded on body.	1+1	2

Qn. Nos.	Value Points		Total
26.	<p>Mention the assistances provided by customer support to a customer.</p> <p>Ans :</p> <p>i) In purchase or maintenance of vehicle.</p> <p>ii) Assistance in planning, installation training, trouble shooting, maintenance upgrading and disposal of vehicle.</p>		2
27.	<p>Explain blind spot detection in car safety technology.</p> <p>Ans :</p> <p>There now is a system for alerting us if we attempt to make a turn and an object or car is in our blind spot. This technology responds as soon as the driver puts on the turn signal thereby preventing a collision caused by the drivers blind spot.</p>		2
VI.	Answer the following questions :	4 × 3 = 12	
28.	<p>Write the requirements of propeller shaft.</p> <p>Ans :</p> <p>i) High torsional strength</p> <p>ii) Toughened and hardened</p> <p>iii) Efficiently welded</p> <p>iv) Dynamically balanced</p> <p>v) Least stress concentration</p> <p>vi) Reduced thrust loads under high torque</p> <p>vii) Higher fatigue life.</p>	3×1	3

Qn. Nos.	Value Points		Total
29.	<p>General tools should be properly handled and proper procedure should be adopted. Why ?</p> <p>Ans :</p> <ul style="list-style-type: none"> i) Tools should be kept at proper place after use. ii) Worn out tools should be replaced with new tools. iii) Tools should be kept in tool box or display board to avoid damage to the tool or worker. iv) Correct procedure should be used for holding any tools otherwise it may hurt worker or damage to material. v) Proper safety procedure should be adopted to avoid accidents. vi) Proper dress should be wear by trainees during workshop practicals. 	3×1	3
30.	<p>Write short notes on "Body language/communication" related to customer service.</p> <p>Ans :</p> <ul style="list-style-type: none"> i) Most of the communication that we relay to others is done through our body language. ii) If we have a negative body language it can show our lack of care. iii) Important aspects of the positive body language are smiling and eye contact. iv) Make sure to look your customers in the eye. It shows we are listening to them. v) Smiling makes the conversion more positive. 	3×1	3

Qn. Nos.	Value Points		Total
31.	<p>Explain the steps of changing the engine coolant.</p> <p style="text-align: center;">OR</p> <p>Explain the steps of changing the fuel filter.</p> <p>Ans :</p> <p><u>Steps :</u></p> <ul style="list-style-type: none"> i) Purchase the coolant as per manufactures specifications ii) Prepare the vehicle iii) Keep a pan below radiator iv) Open the radiator cap and see level of coolant v) Open the drain plug vi) Empty the coolant vii) Put back the drain plug at the bottom of the radiator viii) Fill the radiator to the top with the coolant ix) Turn the engine for several minutes to get any air out of the system x) Watch the temperature gauge, make sure that car does not overheat. Turn the car off. Fill the radiator to the top with coolant. 	$6 \times \frac{1}{2}$	3
	OR		
	<ul style="list-style-type: none"> i) Purchase the filter ii) Locate the old filter iii) Follow procedure to remove fuel pressure iv) Unscrew each hose clamp bolt v) Push the clamp up the hose vi) Remove the old filter and replace with new filter vii) Run the engine and check for leaks. 	$6 \times \frac{1}{2}$	3

Qn. Nos.	Value Points		Total
VII.	Answer the following questions : 3 × 4 = 12		
32.	<p>Draw the diagram of Elliot type stub axle. Label the part, king-pin.</p> <p style="text-align: center;">OR</p> <p>Draw the diagram of Wankel rotary engine. Label the part, spark plug.</p> <p>Ans :</p> <div style="text-align: center;">  <p style="margin-top: 10px;"><i>ELLIOT TYPE STUB AXLE</i></p> </div> <p style="text-align: right; margin-right: 50px;">Diagram = 3 Label the Part = 1</p>		4
OR			
	<p>Ans :</p> <div style="text-align: center;">  <p style="margin-top: 10px;"><i>WANKEL ROTARY ENGINE</i></p> </div> <p style="text-align: right; margin-right: 50px;">Diagram = 3 Label the Part = 1</p>		4

Qn. Nos.	Value Points		Total
33.	<p>How to prepare your car before changing the engine oil and oil filter ?</p> <p>Ans :</p> <ul style="list-style-type: none"> i) Car should be on a level surface ii) The parking brake on and engine off iii) If space needed under the car jack it up and use jack stands to support it. iv) Jacks on their own are very unstable never get under your car without using jack stands v) Put something underneath the engine to prevent spilling oil onto the ground. vi) Follow the steps to change the engine oil and oil filter. 	4×1	4
34.	<p>List the types of spanner used in automobile service.</p> <p style="text-align: center;">OR</p> <p>List the special tools used in automobile service.</p> <p>Ans :</p> <ul style="list-style-type: none"> i) Ring spanners ii) Combination spanners iii) Box spanners iv) Open ended spanners. 	4×1	4
	OR		
	<p>Ans :</p> <ul style="list-style-type: none"> i) Universal clutch holding tool ii) Torque wrench iii) Tappet wrench iv) Fly wheel puller. 	4×1	4