

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E., /EEE	Year / Semester : II/III	Format No.	NAC/TLP-07a.13
Subject Code :EE8301	Subject Name : Electrical Machines I	Rev. No.	02
Unit No : IV	Unit Name : DC MOTOR	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	Which affects the terminal voltage of a dc shunt motor. a) Armature reaction b) Source voltage variations c) Compensating winding d) Any of the mentioned	L3
2	For a dc shunt motor of 5 kW, running at 1000 rpm, the induced torque will be _____ a) 47.76 N b) 57.76 N c) 35.76 N d) 37.76 N	L3
3	The flux and the internally generated voltage of a dc machine is a _____ function of its magneto-motive force. a) non-linear b) linear c) constant d) inverse	L2
4	It is advised not to run dc series motor with no load. Why? a) Because zero torque at no load will make speed infinite b) Because zero torque as no load will not let machine start c) Because infinite torque will be produced d) None of the mentioned	L1
5	It is impossible to start a differential compounded dc motor. a) True b) False	L1
6	A student is given a differential compound motor and he has been asked to make it start. How will he try? a) By shorting series field at start b) To run as shunt motor at start c) By making rated current at start d) All of the mentioned	L1
7	For a 100 hp 250 V, compound dc motor with compensating winding has a field current of 5 A to produce a voltage of 250 V at 1200 rpm. What will be the shunt field current of this machine at no load? a) 5 A b) 5.6 A c) 4 A d) 0 A	L3
8	A dc shunt motor is connected to the source through 3-point starter. Suddenly if we starter handle is moved fastly from off to on position, then the _____	L3

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	<p>a) motor will draw large current b) motor will not start c) motor will burn d) all of the mentioned</p>	
9	<p>A 100 hp, 250 V, 350 A shunt dc motor with an armature resistance of 0.05 ohms. To limit maximum starting current to twice the rated of its value, what will be the number of stages of starting resistances? a) 3 b) 2 c) 4 d) 5</p>	L3
10	<p>The shunt motor starters that can be used is/are _____ a) 3-point and 4-point starter b) 5-point starter c) 4-point starter d) 5-point and 3-point starter</p>	L3
11	<p>The direct-on-line starter is used to start a small dc motor because it limits initial current drawn by armature circuit. a) True b) False</p>	L2
12	<p>The effect of fringing increases as we _____ a) increase air gap b) decrease air gap c) increase in flux density d) introduce more ferric core material</p>	L1
13	<p>The post effects of the armature reaction is _____ a) main field distortion b) shift in MNA c) reduction in main field d) none of the mentioned</p>	L1
14	<p>If the students give a forward shift of 10° to the dc generator, then it _____ a) reduces flux per pole b) improves flux per pole c) increases the flux density in core d) none of the mentioned</p>	L1
15	<p>A dc machine is run at rated speed in forward direction and then in backward direction. It is observed that, speeds of the rotation are different, then it leads to the conclusion of _____ a) incorrect brush placement b) incorrect pole and core alignment</p>	L3

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	c) incorrect field supply d) all of the mentioned		
16	For a dc machine, its commutator has a diameter of 50 cm rotating at 1000 rpm. For a brush width of 1 cm, the time commutation taken by the machine will be _____ a) 0.382 ms b) 0.456 ms c) 0.573 ms d) 0.312 ms		L3
17	The PWM control of DC motor varies _____ a) linearly with speed b) inversely with speed c) parabolically with speed d) exponentially with speed		L3
18	Ward-Leonard system of system of speed control is not recommended for _____ a) constant speed operation b) Wide speed c) frequent-motor reversed d) very slow speed		L3
19	Mark the wrong option. Which of the following cause and effect behaviour in speed control is correct when field resistance is increased. a) Decrease in flux b) Increase in armature current c) Increase in EMF d) Decrease in speed		L2
20	At a very low speed, increase in field resistance will _____ a) decrease the speed of motor b) increase the speed of motor c) not have significant effect on speed d) no effect		L1
21	Small DC motors have best speed control by _____ a) armature voltage control b) field resistance control c) any of the methods d) none of the mentioned		L1
22	To implement armature voltage control, it must be ensured that _____ a) it is used on separately excited machine b) it is used on shunt machine c) it is used on series machine d) any of the mentioned machine		L1
23	Armature voltage control works for speeds _____ base speed and field resistance control works well for speed _____ base speed. a) below, above b) above, below c) above, above d) below, below		L3

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24	The torque limit of speed for a shunt motor _____ a) remains constant till base speed b) remains constant after base speed c) varies linearly after base speed d) varies inversely till base speed	L3
25	A laboratory group was working with a set of 3-hp shunt DC motor. But there was a mistake that it was fused with a 0.3A fuse instead 3A fuse. Then it was started _____ a) a flash occurred instantly b) it ran for 3s and fuse was blown c) it ran normal d) none of the mentioned	L3
26	Why does DC motor sometimes run too fast when under-loaded? a) Due to weak field b) Due to high line voltage c) Due to brush-shifted to neutral d) All of the mentioned	L3
27	The qualities aspired to obtain a good permanent magnet is/are _____ a) high residual flux b) low coercivity c) high coercivity d) high residual flux and high coercivity	L2
28	Which type of field winding required in PMMDC? a) series winding b) shunt winding c) cumulative winding d) none of the mentioned	L1
29	PMMDC are smaller in size due to _____ a) ansence of field winding b) presence of smaller field winding c) present of magnets d) Any of the mentioned	L1
30	PMMDC offers _____ characteristics. a) shunt b) series c) armature d) cumulative	L1
31	How to manage run-away issue for dc shunt motor in industry? a) By using PMDC motor b) By using constant field motors c) This can not be avoided d) None of the mentioned	L3
32	A PMMDC motor has an armature resistance of 4.2 ohms. When 6 V supply is applied to motor it runs at 1215 rpm drawing 14.5 mA on no-load. The rotational losses is? a) 86.1 mW b) 86.1 W	L3

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c) 8.6 W d) 8.6 mW	
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