

Bihar Public Service Commission

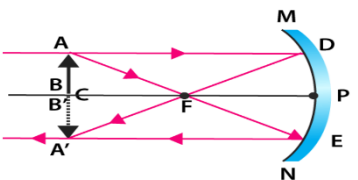
69th Integrated Combined (Preliminary) Competitive Examination

Examination Date : 30.09.2023

2ND PROVISIONAL ANSWER KEY : General Studies

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
1	D	38	A	68	B	117	C	All statement are correct
2	A	39	B	69	C	118	D	(a) Cassini Huygens matches with (2) (Saturn and its rings) because it is a space research mission by NASA, ESA & ISA to send space probe to study the planet Saturn & its system. (b) Juno matches with (1) (Jupiter) it is a mission, designed to improve our understanding of the Solar System's beginnings by revealing the origin and evolution of Jupiter. (c) Artemis matches with (4) (Human Space-Flight-Moon to Mars) because Artemis is a NASA mission that will land the 1st Woman and first Person of Color on the Moon using in movatue technology. (d) VERITAS matches with (3) (Venus) because VERITAS Mission is for studies of the surface and interior of Venus with a powerful new generation of Scientific tools. Hence (A) is correct option.
3	C	40	D	70	A	119	B	
4	C	41	A	71	B	120	A	Human being when acts as a primary host, develops the disease Taeniasis by <i>Taeniasolium</i> , <i>Taeniasaginata</i> and <i>Taenia asiatica</i> and when acts as a secondary host, develops Neuro-cysticercosis. Hence, the option 'C' is correct.
5	D	42	D	72	D	91	D	'Cobra' is a high-level, object-oriented programming language used for general programming purposes, 'Python' is a high-level general purpose programming language , 'Squirrel' is a programming language similar to

Series-A		Series-B		Series-C		Series-D		Remarks
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								'Lua', but uses a 'C' like syntax and finally 'Java' is a popular programming language created in 1995 and is being used for mobile applications. Hence all four being computer languages, (D) is the correct option.
6	D	43	A	73	B	92	C	GPT, in Chat GPT, stands for 'Generative Pretrained Transformer'. Hence (D) is the correct option.
7	C	44	D	74	A	93	B	Tongue of human being has different types of papillae associated with taste buds and are responsible for detecting the tastes like – 1. Sweet, 2. Bitter, 3. Salty, 5. Umami and 6. Sour. They do not detect the 'Spicy' taste (Option-4) and the 'Pungent' (Option-7) which is associated with smell. Hence option 'C' is correct
8	C	45	A	75	B	94	A	1. Anorexia is associated with 'Eating disorder', 2. Insomnia – Sleep disorder, 3. Dyspnoea-Shortness of breath and 4. Anosmia is associated with 'Partial or full loss of smell'. Only options 3 and 4 are correctly matched. Hence, the option 'C' is correct.
9	B	46	C	76	D	95	A	Pulsars are neutron stars which rotate on their axis. The rotation creates the pulses. They may or may not be created by the supernovas.
10	C	47	D	77	A	96	B	Diamond structure can be produced by graphite only by applying temperature of 3000k and pressure of 125000 atmosphere. Catalysts such as chromium, Iron or platinum may be use. Ref: Advances inorganic chemistry by cotton & Wilkinson, 2nd Ed, page 296
11	D	48	A	78	B	97	C	Kevlar is a polymer of p-phenylenediamine and Terephthalic acid. The fibre produced has ten times greater tensile strength than steel.
12	C	49	D	79	A	98	B	Full form of HMX is high melting explosive. Its chemical composition has many variations.

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
13	D	50	A	80	B	99	C	Tesla CEO Elon Musk released AI-powered humanoid robot, 'Optimus', engaging in various activities in October 2022. Hence (D) is the correct option.
14	A	51	B	51	C	100	D	'The Manhattan Project has a top secret research and development undertaking, by USA, to make atomic bomb during World War II. Hence (A) is the correct option.
15	B	52	C	52	D	101	A	<p>If an object is placed at the centre of curvature of a Concave mirror, then the image formed is real, inverted and of the same size as that of the object.</p> 
16	A	53	B	53	C	102	C	A photo electric cell such as solar cell or photo transistor converts light energy into electric energy.
17	D	54	A	54	B	103	C	<p>The amount of solute present per unit volume is called "Concentration of Solution"</p> <p>Ref:- Principles of physical chemistry by Puri, Sharma & Pathania, 34th ED, 1993. page 748.</p>
18	A	55	B	55	C	104	D	<p>Immune references can be stimulated in host by introducing live, attenuated pathogen, i.e, SARC-Cov-2 virus.</p> <p>Option 'C' is wrong because the statement made therein unscientific. Instead it should be "mRNA of spike protein of SARS-Cov-2. Option 'B' and 'D' are not associated with the mechanism of stimulating immune response by covid vaccines. Hence they are not correct.</p>
19	D	26	D	56	D	105	D	A salt water is completely ionised in water. Hence it is a good conductor of electricity. Orange and Lemon

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								juice contain various salts and acids and are therefore good conductors of electricity. 'D' is the only option for a bad conductor.
20	A	27	B	57	C	106	D	James Watson and Francis crick received Nobel Prize, 1943 for their model of DNA double helix structure.
21	C	28	D	58	A	107	B	The Question does not give the parameters for height and time. Assuming that both objects are dropped at the same time from the same reasonable height, they will have "The same velocity at any instant" as they fall freely near the surface of the moon.
22	C	29	D	59	A	108	B	Vector vaccine refers to the introduction of viral gene into a harmless virus (adeno virus) i.e. Modified version of another virus, which is then introduced in the host body to stimulate immune response. Hence option 'C' is correct. Option 'A' and 'B' are not related to vector vaccines. Option 'D' is one of the principles of vaccines against SARS "- COV-2 but no vector was used in this technology.
23	C	30	D	60	A	109	B	New crust is formed when a crack develops in the middle of ocean floor and lava flow takes place. Research on reversal of magnetic poles has revealed sea floor spreading has occurred approx. 10 million year interval in the past.
24	C	31	D	61	A	110	B	
25	A	32	B	62	C	111	D	mRNA stands for messenger Ribo Nucleic Acid and is the single stranded molecule that carries the instructions to make proteins. During pandemic mRNA is detected by RT-PCR for diagnosis of disease.
26	B	33	C	63	A	112	B	An AC current is produces by a Dynamo which is called AC Dynamo or Alternator. This is done by rotating a coil or Armature within the magnetic field created by field

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								coils. If a DC current is required it can be supplied by a commutator in a DC Dynamo.
27	B	34	C	64	A	113	B	Electric current is defined as surface integral of current density i.e. $I = \int \vec{j} \cdot \vec{ds}$ Hence current density (\vec{j}) is a vector quantity.
28	B	35	C	65	A	114	B	
29	D	36	D	66	D	115	D	
30	B	37	C	67	A	116	B	The central nervous system has four parts, namely, Brain, Spinal cord, Nerve and Neurons. The Input and output nerves meet at several places, particularly in the spinal cord. They do not meet in the liver or the heart as they do not form part of nervous system.
31	A	62	B	97	C	141	D	In the context of 'Shipwreck Tourism', it has been explored at Sunchi Reef, Ameer Shoals and Grande Island off the Coast of Goa.
32	B	63	C	98	D	142	A	Statement 1 and 3 are correct in context of G20 members.
33	Deleted	64	Deleted	99	Deleted	143	Deleted	Yevgeny Prigozhin died on 23.08.2023 and this exam was held on 29.09.2023. So on the date of examination no one was the Head of Russia's Wagner Mercenary Group. Since no option is correct. Hence question is deleted.
34	C	65	D	100	A	144	B	The Global Gender Gap report is released by the world Economic Forum.
35	A	66	B	101	C	145	D	Queen Elizabeth II reigned for 70 years (1952-2022) and died at the age of 96 years (1926-2022).
36	B	67	C	102	D	146	A	Path to Pride was the theme of Def Expo. 2022 held in Gujarat.
37	D	68	A	103	B	147	C	Thadingyut Festival is celebrated in Myanmar.
38	D	69	A	104	B	148	C	White House is a symbol of American Democracy because the President of U.S.A is an essential part of American Constitution. The

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								congress and senate meet at Capitol Hill, but they cannot function properly without the president, whose office is at White House.
39	C	70	D	105	A	149	B	Net Metering is an electricity billing mechanism for solar energy by consumers which is added to the grid.
40	A	71	B	106	C	150	D	Combination of Red and Blue form magenta and teal is the combination of blue, green and white. So correct choice is only (A).
41	D	72	A	107	B	121	C	The name of imploded deep Sea submersible was Titan.
42	B	73	C	108	D	122	A	Correctly matched is option 'B'.
43	C	74	D	109	A	123	B	The most recent interview was given by Barrack Obama at Athens on 26-06-2023 earlier interviews do not count.
44	D	75	A	110	B	124	C	Statement 2 and 4 are correctly matched pairs.
45	C	76	D	81	A	125	B	There are 576 Languages in the country according to the Mother Tongue Survey of India (MTSI).
46	A	77	B	82	C	126	D	Tamil Nadu launched the State-Level committee for Vulture conservation (SLCVC) for the protection of Vulture in India.
47	A	78	B	83	C	127	D	Ten captive-bred Asian Giant Tortoises (Manouria ernys) were recently released into Ntangki National Park.
48	A	79	B	84	C	128	D	Germany issued the statement in August 2022 U.S.A reiterated its position in July 2023 to say that Arunachal Pradesh is an integral part of India.
49	A	80	B	85	C	129	C	India's Rudranksh Balasaheb Patil won Gold medal in Men's 10 m Air Rifle at the ISSF World Championship in Cairo.
50	A	81	B	86	C	130	D	NEP 2020 originally stated that integration should start form Grade 6. All changes were made subsequently in different years.
51	B	82	C	87	D	131	A	India signed the Economic

Series-A		Series-B		Series-C		Series-D		Remarks
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								Cooperation and Trade Agreement (ECTA) with Australia.
52	C	83	D	88	A	132	B	The Plain Language Act was passed by the New Zealand recently.
53	C	84	D	89	A	133	B	Fossils of the oldest known insect and the world's first plant pollinators called Tillyardembiids was discovered recently in Russia. Tillyardembiids are earwig-like insects. The specimens found in Russia were estimated to be around 280 million years old.
54	C	85	D	90	A	134	B	The 'Lisbon Declaration' is associated with the conservation of Oceans.
55	B	56	C	91	A	135	B	Horse was not known to the Indus Valley people.
56	C	57	A	92	B	136	A	India Gate is not a UNESCO World Heritage site.
57	C	58	A	93	B	137	A	
58	B	59	C	94	A	138	B	
59	B	60	C	95	A	139	B	
60	Deleted.	61	Deleted.	96	Deleted.	140	Deleted.	The Govt. Of Bihar signed an MOU with UN Environment Programme to make Bihar Pollution free from 2040. This year is not mentioned in any option. Hence deleted.
61	C	93	D	125	A	18	B	Stupa, Chaitya and Vihara are all associated with Buddhism.
62	C	94	D	126	A	19	B	Sujini is a type of embroidery.
63	C	95	A	127	B	20	A	Vikramshila University is located in Bhagalpur and not in Banka district. It was established by Pal dynasty and not by Gopala I. These two incorrect statements are covered by option 'C'
64	C	96	A	128	B	1	A	Gun powder existed in India before the arrived of Babar. Also arch and dome existed before him. Hence only option 'C' is correct.
65	B	97	C	129	D	2	A	Surat was referred as Bab al-Makkah in Mughal times as it was a departure point for pilgrims travelling for Hajj.
66	C	98	D	130	A	3	B	Ashta Pradhan was the name given to the eight ministers/advisors of Shivaji.

Series-A		Series-B		Series-C		Series-D		Remarks
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67	C	99	D	111	A	4	B	Painting of Bodhisattva Padmapani is a mural painting in the Ajanta Cave 1.
68	D	100	D	112	D	5	D	Statements 1 & 2 are incorrect.
69	A	101	B	113	C	6	D	The correct match between List 1 & 2 is a-2, b-1, c-4, d-3.
70	C	102	D	114	A	7	B	Balban introduced many Iranian practices at his Court, including Nowruz.
71	A	103	B	115	C	8	D	Nathpanthis, Siddhas and Yogis popularized devotional cult in Northern India.
72	C	104	D	116	A	9	B	Both statements 1 & 2 are found in wood's dispatch of 1854.
73	C	105	D	117	A	10	B	Maithili language was developed Karnat Dynasty. Other options are wrong.
74	A	86	B	118	C	11	D	Rajagriha was capital of Magadh kingdom. Patliputra later became capital of Magadh empire. Samrajya in Hindi means empire and is not a correct translation of Kingdom.
75	D	87	A	119	B	12	C	Statements 1, 2 and 3 are correct.
76	D	88	A	120	B	13	C	All four statements correctly describe Lord Mayo's Resolution of 1870.
77	B	89	C	121	A	14	B	Kamandaka was the author of Nitisara.
78	A	90	B	122	C	15	C	Futuh-i-Alamgiri was written by Ishwar Das Nagar.
79	B	91	C	123	A	16	B	Meghavarman of Sri Lanka sent an emissary to Samudragupta seeking permission to construct a temple at Bodh Gaya.
80	A	92	B	124	C	17	C	Bihar was first separated from Bengal Presidency in 1912.
81	D	111	A	140	B	36	C	Lake Victoria is one of the great lakes of Africa and the only outflow is through river Nile. But statements 1 and 3 are wrong. it is the 2nd largest, not 3rd largest fresh water lake. Besides, it is not bordered by Rwanda. Hence Option 'D' is correct.
82	D	112	A	141	B	37	C	Heat wave is considered at 40° in Plains and 30° in Hilly regions. Hence both options (1) & (2) are wrong.
83	A	113	B	142	C	38	D	Only this option matches List I with

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								List II.
84	A	114	B	143	C	39	D	Only this option lists all emirates of UAE correctly.
85	D	115	A	144	B	40	C	River Subarnarekha originates near village Nagri.
86	A	116	B	145	C	21	D	Serial no. 1 & 4 are in Bihar. No. 2 is in UP and No. 3 is in Rajasthan.
87	D	117	D	146	D	22	D	Gangetic River Dolphin (also recognized as India's National Aquatic Animal) has been categorized as 'endangered animal in the IUCN's Red List. It is blind as it does not have a crystalline eye lens. Further, navigation and hunting are carried out by using echolocation. Thus all statements are correct. Option 'D' is correct.
88	C	118	D	147	A	23	B	The other names of river Gandak are Narayani and Salgrami.
89	D	119	A	148	B	24	C	Gold is found in Jamui district previously it was found in Munger district which included Jamui. The objection made is outdated.
90	C	120	D	149	A	25	B	Triveni canal has been constructed on river Gandak.
91	A	121	B	150	C	26	D	Option 'A' is supported by latest knowledge in geology.
92	A	122	B	131	C	27	D	Only this option provides correct watch of rock systems with their descriptions.
93	A	123	B	132	C	28	D	Gulf of Mannar Biosphere Reserve matches with the description given.
94	A	124	B	133	C	29	D	The earth rotates 1° Longitude in 4 minutes. Hence it will rotate 90° in 6 hours.
95	B	125	C	134	D	30	A	Dharwar Rocks and Aravalli hills belong to Archean period in which gas or oil is not found Cuddapah series is not famous for diamonds. Diamond is found in Panna and Golkunda which are not part of Cuddapah
96	C	106	A	135	B	31	A	From 0° to 180° there would be 181 latitudes. But N pole and S Pole are points on the globe and are not drawn as latitudes. Hence we are left with 179 lines.

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
97	C	107	A	136	B	32	A	The Kosi plain is in Bihar. It is a triangular plain with apex at Birpur (54M) on Nepal border. The base from Khagaria (36M) to Kursela (25M) runs parallel to river Ganga. The upper plain (below 50M) has a small area. The middle plain (Saharsa, Supaul, Madhepura) is below 40M. The lower plain with about 60% area is around 25M. Hence the average height is 30 meters above sea level.
98	B	108	C	137	A	33	B	Tropic of Cancer is 23.5° N and Indian standard date line is 82.5°E. They intersect in Baghelkhand. Bundelkhand is north of the Tropic and Malwa is west of the dateline.
99	C	109	A	138	B	34	A	The borders of Almora District connect other districts of Uttarakhand. All other options have one border along Tibbet.
100	A	110	B	139	C	35	C	El Nino current flow is confined to Pacific ocean area and along Peru coast in Eastern Pacific even though its effect is wide spread including India. Since question is about its current flow only, hence the correct answer is option (A).
101	D	128	A	7	B	49	C	Parliament has not passed any law and there is no mentioned of collegium in the constitution. Justice Bhagwati's judgement was in the 2 nd judge case. Hence only statements 1 and 3 are correct.
102	C	129	D	8	A	50	B	According to 42 nd Amendment added three words in the preamble and also empower the President of India to disqualify the member in the consultation with the members of the State Legislature. Therefore, the option 'C' are incorrect.
103	D	130	D	9	D	41	D	All four statements correctly apply to scheduled Tribes.
104	B	131	C	10	D	42	A	The idea of Fundamental Rights have been taken from U.S.A
105	C	132	D	1	A	43	B	Untouchability has been abolished under article 17 of the Constitution of India.

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
106	A	133	B	2	C	44	D	Article 216 is clear on this point.
107	C	134	D	3	A	45	B	The fifth schedule of the Indian Constitution deals with the Scheduled tribe.
108	B	135	B	4	B	46	B	In the year 1973 for the first time the doctrine of "Basic structure" of the constitution was dealt by the Supreme Court of India in Kesavananda Bharti vs State of Kerala.
109	A	126	B	5	C	47	D	The communist party of India was founded in 1925. The Communist Party of India (Marxist) was founded in 1964. The Bahujan Samaj Party was founded in 1984. All India Trinamool Congress was founded in 1988. Hence option 'A' is correct answer.
110	C	127	C	6	C	48	C	Article 120 (1) the Speaker can allow any member of the House to speak in mother tongue.
111	D	141	D	19	D	62	D	The Reserve Tranche Position was introduced in FER of RBI in 2002-2003. Hence all four statements are correct.
112	D	142	D	20	D	63	D	All the four statements are true regarding rules of Origin.
113	C	143	D	21	A	64	B	Statement 1 is wrong as it mentions 10000 instead of 1000. Statement 4 is wrong as it says Uttar Pradesh Instead of Madhya Pradesh.
114	D	144	A	22	B	65	C	Statement 4 is inclusive of statement 1,2 & 3.
115	C	145	D	23	A	51	B	Statement 1 is wrong as it says Bankruptcy instead of insolvency. Statement 2 is wrong as it says insolvency instead of Bankruptcy. Statement 3 says opposite of the correct definition. Only Statement 4 is correct.
116	A	146	B	24	C	52	D	Industrial Policy Resolution was adopted in 1956.
117	D	147	A	25	B	53	C	Statement 1 & 4 are correct explanations of PLI scheme. Option D covers the incorrect explanations.
118	B	148	C	11	D	54	A	Statement 1 and 3 are incorrect

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								regarding the SVAMITVA Scheme.
119	A	149	B	12	C	55	C	According to Article 360 (4) (a) (i) (ii) and 360 (4) (b) statements 1, 3 and 4 are correct respectively.
120	D	150	A	13	B	56	C	All four statements correctly describe the elements of stagflation.
121	D	136	A	14	B	57	C	The question asked for the "Trend" of FDI according to Economic survey 2022-23. Statement 2 can be seen on page no.271 para 9.16 which says "Notwithstanding an overall drop in FDI in the first half of FY-23, in flow have stayed above the pre-pandemic level....." Here the trend is "falling" though it is still above the pre-pandemic levels. Hence the statement 1, 2 & 3 are incorrect and only statement 4 is correct and option 'D' is correct.
122	Deleted	137	Deleted	15	Deleted	58	Deleted	According to 2011 Census the population of Gaya District was 43 lakh (4391418). According to the population estimates and projections from the latest revision of the UN World Urbanization Prospects, Gaya's 2023 population is now estimated at 598,345. These estimates represent the Urban agglomeration of Gaya, which typically includes Gaya's population in addition to adjacent suburban areas. But according to estimates as per aadhar uidai.gov.in Dec 2023 data, the current population is estimated to be 6,104,072. So, in view of varying estimates and in the absence of any recent census data, there is no authentic data about current population. Hence the question is deleted.
123	A	138	B	16	C	59	C	Interest payment is a non-plan expenditure.
124	C	139	A	17	B	60	A	Option 'A' and 'B' are true and option 'C' is false.
125	A	140	B	18	C	61	C	Objection says 9.3% but latest figures available say 9.2% Hence option 'A' is correct. Economic

Series-A		Series-B		Series-C		Series-D		Remarks
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								survey 2022-23, Page-43
126	C	4	C	33	C	79	C	All statements are correct reasons for the failure of 1857 revolt.
127	B	5	C	34	A	80	B	Batak(h) Mian Ansari saved Gandhi's life when an attempt was made to poison him.
128	C	6	D	35	A	66	B	Swami Sahajanand Saraswati organized the Bakasht movement during 1937-38.
129	B	7	C	36	D	67	A	The correct chronological sequence is 2, 4, 1,3.
130	D	8	A	37	B	68	C	Lord Lytton is not associated with the Ilbert Bill. It was proposed during the tenure of Lord Ripon.
131	A	9	B	38	C	69	D	The Treaty of Allahabad (1765) was signed after the battle of Buxar (1764).
132	B	10	C	39	D	70	A	The Dutch East India Company established its first Factory at Patna in 1632.
133	C	11	D	40	A	71	B	Gandhi took recourse to a hunger strike for the first time during the Ahmadabad Mill Strike for mediation between mill-owners and striking employees.
134	B	12	C	26	D	72	A	Shri Krishna Singh, also known as Bihar Kesari, actively participated in the Quit India Movement (1942).
135	C	13	D	27	A	73	B	During the Champaran movement, the British Govt. set up the Champaran Agrarian Committee to look into the grievances of the peasants.
136	A	14	B	28	C	74	D	The correct match is a-2, b-1, c-3.
137	C	15	D	29	A	75	B	Ambabai, the woman freedom fighter belonged to Karnataka.
138	C	1	A	30	B	76	A	J. Andrew was not a member of the Cabinet Mission.
139	B	2	C	31	A	77	B	This was originally said by A.O Hume, But it was reiterated by Lala Lajpat Rai.
140	C	3	A	32	B	78	A	The resolution on Fundamental Rights was passed for the first time at the Karachi session (1931) of the

Series-A		Series-B		Series-C		Series-D		Remarks
Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	
								Indian National Congress.
141	C	19	D	46	A	89	B	
142	D	20	A	47	B	90	C	
143	B	21	A	48	B	81	A	
144	D	22	A	49	B	82	C	Snoberry is a fruit. Snoberry means Pride.
145	B	23	C	50	D	83	A	
146	B	24	C	41	D	84	A	Correct Answer is 77 since middle column is 7 times the difference between left & right column.
147	D	25	A	42	B	85	C	
148	A	16	B	43	C	86	D	As per code language used in the question VIGOROUS will be written as 22187121812619 since alphabets are numbered serially either in forward sequence or in reverse sequence. Alternatively, one can quickly solve it by the process of elimination. Since "O" comes twice in VIGOROUS and its value is 12 from the code for MONK, so the answer is "A" since only in this option 12 comes twice.
149	C	17	D	44	A	87	B	
150	A	18	B	45	C	88	C	If $1/\sqrt{2}$ is x, then N is x km East and x km south of O while P is 2km south of O. So, P is x km west & 2-x km south of N. Since N is 4 km south of M, so P is x km west & 4+2-x km south of M. So, the distance between P & M is hypotenuse of right-angle triangle with sides x and 6-x. So the correct answer is "A". Even intuitively, this has to be less than x+(6-x) as sum of two sides of a triangle is always larger than the third side.