# KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE, VARANASI Summative Assessment II, 2015-2016

**Class-IX** 

Subject – Science (086/090)

Max Time : 3:00hrs

Max. Marks : 90

### **GENERAL INSTRUCTIONS**

- 1. The question paper comprises of three sections A, B and C. You have to attempt all the sections.
- 2. All questions are compulsory.
- 3. There is no choice in any question.
- 4. All questions of section A, B and C are to be attempted separatory.
- 5. Question no. 1 to 3 in section A are one mark question. These are to be answered in one word are one sentence.
- 6. Question no. 4 to 6 in section A are two marks questions. These are to be answered in about 30 words.
- 7. Questions no. 7 to 18 in section A are three marks questions. These are to be answered in about 50 words.
- 8. Question no. 19 to 22 in section A are five marks questions. These are to be answered in about 70 words.
- 9. Question no. 23 to 31 in section B are multiple choice questions based on practical skill and are 1 marks each.
- 10. Question no. 32 to 34 in section B are also based on practical skill and are two marks each you have to give an appropriate answer.
- 11. Question no. 35 to 37 in section C are based on OTBA having 2,3 and 5 marks respectively.

## <u>SECTION – A</u>

- 1. How many atoms are present in a K<sub>2</sub>SO<sub>4</sub> molecule?
- 2. Define mass number of an atom.
- 3. Change 1kWh into joule.
- 4. Define chronic diseases with one example.
- 5. Which are the two forces act on an object placed on the surface of water?
- 6. The atomic number of two elements X and Y are 13 and 16. What will be the number of electrons in their ion  $X^{3+}$  and  $Y^{2-}$ ?
- 7. Composition of the nuclei of two atomic species X and Y are given below.

(a) Calculate the number of neutrons in X and Y.

Y

- (b) How many electrons present in M shell of X.
- (c) What is the relation between X and Y?
- 8 (a) Why do isotopes show similar chemical properties?
  - (b) Define isotopes.
  - (c) Which isotope is used in the treatments of cancer?
- 9. Draw a well labelled diagram of Balanoglossus with any three identifying features.
- 10. Define the following terms :
  - (a) Bilaterally symmetrical. (b) Triploblastic. (c) Cryptogamae.

- 11(a) Define acute diseases with one example.
- (b) What is immunisation?
- 12. Write any three differences between infections and non-infections diseases.
- 13(a) What do you mean by inflammation?
- (b) How can severity of disease manifestation depend on the number of microbes?
- 14. Write any three applications of Archimedes' principle.
- 15. The mass of a wooden block is 10 kg and its dimensions are 40cmx 20cmx10cm. find the pressure exerted by wooden block if it lie with :
- (a) Side of dimension 20cm x 10cm.
- (b) Side of dimension 40cm x 10cm.
- 16(a) Define 1 joule of work.
- (b) What is the kinetic energy of an object? write an expression for it.
- 17(a) When is the work done by a force said to be negative?
- (b) A porter lift a luggage of 50kg from the ground and put it on his head 175cm above the ground. Calculate the work done by him on the luggage.
- 18. Manya was watching a program based on ships on television. She Saw a device attached to a ship through which the men on the ship located the enemy submarines and sent the message to the headquarters.
- (i) Write the full form the device.
- (ii) On which principle does the device work?
- (iii) Write any two other uses of device attached to ship.
- 19. Describe Rutherford's model of the atom. Write draw back of his model.
- 20(a) Which are the two principles of treatment?
- (b) Write any two common characteristic features of the animals belonging to the following :
- (i) Echnodermata (ii) Aves
- (c) Define warm blooded and cold blooded animal.
- 21(a) Write any four applications of ultrasound.
- (b) A ship send out ultrasound that returns from the seabed and is detected after 5 seconds. If the speed of ultrasound through sea water is 1450ms<sup>-1</sup>. What the distance of the seabed from the ship?
- 22(a) An electric heater is rated 1500w. How much unit of energy does it use in 8 hours?
- (b) An object of mass 10kg is at a certain height above the ground. If the potential energy of the object is 588J. Find the height at which the object is with the respect of ground. (g = 9.8ms<sup>-2</sup>).

#### SECTION - B

23. Which of the following reaction is not suitable to verify the law of conservations of mass in a chemical reaction.

(a) Precipitation reaction	(b) displacement reaction
(c) Redox reaction	(d) Nuclear reaction.
24. Which of the following a herm	aphrodite.
(a) Human beings	(b) Cow
(c) Earthworm	(d) Dog
25. Young one of fish is called.	
(a) Larva	(b) fry
(c) Maggot	(d) tadpole
26. The density of water is –	
(a) 1 Kg cm $^{-3}$	(b) 1 gm $^{-3}$
(c) 1 Kg m $^{-3}$	(d) 100 gm $^{-3}$

27. On immersing a body fully in a liquid the apparent loss in weight will be :

- (a) More in lighter liquid.
- (b) Less in denser liquid

(c) More in denser liquid (d) Both a and b 28. An iron cuboid of m gram is placed on a surface measuring 'a' cm x 'b' cm. The pressure

- developed by the cuboid is.
  - (a) mxg/axb

- (b) m/ axb
- (c) axb/m (d) axb/mxg

29. If the angle of incedence is increased by  $10^0$  by how much degree will the angle between the incedence wave and reflected wave change?

- (a)  $10^{\circ}$  (b)  $30^{\circ}$
- (a)  $10^{-10}$  (b)  $30^{-10}$  (c)  $50^{-10}$  (d)  $20^{0}$

30. Sound wave travel in form of alternate :

(c) Rarefactions and troughs

- (a) Crests and troughs (b) Compression and crests
  - (d)Compressions and rarefactions.
- 31. When a sound wave travels in a material medium the physical quantity that is transported from one place to another is :
  - (a) Speed (b) Velocity
  - (c) Mass (d) Energy

32. In which reaction, law of conservations of mass is not applicable?

33. The floral part of a plant consisting 5 sepals, 5 petals, 5 stamens :

(i) In which group of angiosperm would you like to place this plant?

(ii) What types of leaves venation and root system will be found in this plant?

34. State two precautions that should be observed while making use of an overflow can to determine the dinsity of solid.

## **SECTION – C**

#### OPEN TEXT BASED ASSESSMENT SCIENCE, CLASS- IX

#### Theme-1: Handling Drought in our Country

- Q.1. Which are the human activities leading to drought like conditions?
- Q.2. How does drought can affects all aspects of our society and environment?
- 3. Describe all the components related to drought planning process helpful to reduce and eliminate the impact of drought.

#### Theme-2: Conservation of water Bodies.

- Q. 1. How do various anthropogenic activities are responsible for water pollution?
- Q.2. Describe public awareness activities for conservation of water in village.
- Q.3. Which are the programmes and schemes have been launched by Government and other authorities to conserve, recycle and restore the water?

# KENDRIYA VIDYALAYA SANGATHAN REGIONAL OFFICE, VARANASI Summative Assessment II, 2015-2016

Class- IX

Subject – Science (086/090)

Max Time : 3:00hrs

Max. Marks : 90

# MARKING SCHEME

O.nos	Answer	Marks
1	K2SO4	
1.	$2 \pm 1 \pm 4 = 7$ atoms	1
2	The sum of the total number of protons and neutrons present in the	1
2.	nucleus of an atom	1
3	$1kWh - 1kW \times 1h$	1
5.	-1000wy 3600s	1
	= 3600000	
	$= 36 \text{ y} \cdot 10^{6} \text{ J}$	
1	Definition Example	1 + 1
4. 5	If the density of object more then that of liquid sink	$1 \pm 1$ 1 ± 1
5	If the density of object loss than that of liquid – slik.	1+1
6	$V^{3+} = 12$ 2	1 + 1
0.	A = 10 = 10	1+1
	= 10 electrons $V^{2-} = -16+2$	
	1 - 10+2	
7(a)		1 + 1 + 1
/(a).	X = 40 18 - 22 neutrons	1 + 1 + 1
	A = 40 - 18 - 22 lieutions	
	18	$1 \pm 1 \pm 1$
	V = 40 = 20 = 20 neutrons	1   1   1
	$1^{\circ} = 40^{\circ} = 20^{\circ} = 20^{\circ}$ neutrons	
(h)	Atomic No. of $X = 18$	1 + 1 + 1
(0)	No of protron = No of electron = $18$	1   1   1
	K I M	
	2 8 8 M Shell of x have 8 electrons	
(c)	Atomic no. different but mass no same- Isobar	
(0)		
8. (a)	No. of valancee electron are same	
(b)	Definition of isotope	1 + 1 + 1
(c)	Isotope of cobalt	
9.	Figure and any three features.	3
10(a)	Body can be divide in two equal part.	3
(b)	Three layers of cell	
(c)	Hidden reproductive organs, reproductive organs is inconspicious.	
11(a)	Definition of acute diseases.	11/2 + 11/2
(b)	Definition of immunisation.	
12	Three difference of each.	1 + 1 + 1

13(a)	An active immune system recruits many cells to the affected tissue to	11/2 +11/2
	kill of the disease – causing microbes. This recruitments process is	
$(\mathbf{l}_{\mathbf{r}})$	called inflammation.	
(b)	If the number of microbes is very small in body the disease	
	diagonal con he converse	
14	disease can be severe.	1 . 1 . 1
14	Any three applications	1+1+1
15.a	Mass of wooden block = $10$ kg	11/2 +11/2
	$1 \text{ nrust} = 10 \text{ kg} 9.8 \text{ ms}^{-2}$	
	= 98N	
	Area of side = $20 \text{ cm} \times 10 \text{ cm}$	
	$= 200 \text{cm}^2$	
	$= 0.02 \text{m}^2$	
	Pressure = $(98N/0.02)m^2$	
	$= \underline{98 \times 100}$	
	$= 4000 \text{ Nm}^{-2}$	
h	= 4900  INII	
D	Area = $40 \text{ cm} \times 10 \text{ cm}^2$ $400 \text{ cm}^2 = 0.04 \text{ m}^2$	
	400 cm = 0.04 m	
	$Pressure = (980 / 0.04) III - 0.08 \times 100$	
	$-\frac{98x100}{4}$	
	$-2450$ Nm $^{-2}$	
16(a)	- 2430 Mill	116 + 116
10(a)	displace it by 1m along line of action of therefore	172 +172
(b)	Kinetic energy is the energy possessed by an object due to its motion	
(0)	Finally my <sup>2</sup> $F_{\rm mv}^2$	
17(a)	Work done is negative when the force acts opposite to the direction of	
17(u)	displacement and angle between the two forces is $180^{\circ}$ displacement is	
	in a direction opposite to the direction of force applied	
(b)	Mass of luggage $m = 50 \text{kg}$	
(0)	displacement = 175cm	
	= 1.75 m	
	w = Fxs	
	= mg x s	
	$= 50 \text{kg x } 10 \text{ms}^{-2} \text{ x } 1.75 \text{m}$	
	$= 8/5 \text{kg ms}^{-2} \text{m}$	
	= 8751 - 8751	
18(i)	- 6755 Sound Navigation and Ranging	$1 \pm 1 \pm 1$
(ii)	Principle of ultrasonic sound wave	1   1   1
(iii)	To determine the depth of sea locate under water hill submarine etc.	
19	Rutherford's model of the atom Dark back	3+2
20(a)	To reduce the effects of the disease	1+1
(u)	To kill the cause of the disease or microorganism.	- · •
(b)	Any two features of Echinodermata	$\frac{1}{2} + \frac{1}{2}$
(-)	any two features of Aves	$\frac{1}{2} + \frac{1}{2}$
(c)	Warm blooded – Temperature of body remains same.	$\frac{1}{2} + \frac{1}{2}$
	Cold blooded – Temperature of body change according to environment.	
21(a)	Any four applications	1/2+1/2+1/2+1/2
(b)	t=5 seconds	

	v = 1450 m/s	3
	distance = $2x$ depth of sea	
	= 2d	
	2d = speed x time	
	= 1450  m/s x 5 seconds	
	2d = 7250m/2 = 3625m	
22(a)	Power, $P = 1500w$	2 1/2
	$= (1500/1000) \mathrm{kW}$	
	= 1.5kW	
	t = 8h	
	Power = Energy used / Time taken	
	Energy used = Power x time	
	$= 1.5 \text{kW} \times 8 \text{h}$	
	= 12 unit	2 1/2
(b)	m= 10Kg	
	$g = 9.8 m s^{-2}$	
	Ep = 588J	
	Ep = mgh	
	$588J = 10 \text{kg x } 9.8 \text{ms}^{-2} \text{ x h}$	
	$h = 588J/98Kgms^{-2} = 6m$	
	SECTION - B	
23.	d	1
24.	с	1
25.	b	1
26.	c	1
27.	a	1
28.	a	1
29.	d	1
30.	d	1
31.	d	1
32.	In an nuclear reaction	
33(i)	Dicotyledons	
(ii)	Reticulate venation, tap root system	1/2+1/2
34(i)	The level of water in the overflow can should be up to its brim.	
(11)	The overflow can should be placed on a horizontal surface.	
1		

	SECTION – C (OTBA)	
	Theme – 1 Handling Drought in our country.	
Ans.1(i)	Over farming	2
(ii)	Excessive irrigation	
(iii)	Deforestation	
(iv)	Urbanization	
(v)	Industrialisation	
Ans.2(i).	Economical effects – Loss of assets in crop and productive capital.	3
(ii)	Effects on environment	
(a)	Soil become dry	
(b)	Plant will be die	
(c)	Soil erosion	
(d)	Disturbed ecosystem	
(e)	Species become endangered	
(iii)	Human activities-	
(a)	Farmers will struggle	
(b)	Water becomes more expensive	
(c)	Price of food items increase	
Ans.3.	Describe following	5
(a)	Monitoring and early warming	
(b)	Risk assessment	
(c)	Mitigation	
(d)	Post harvest management	
(e)	Public distribution system	
(f)	Crop insurance	
	Them - 2 Conservation of water bodies.	
Ans.1.(a)	Urbanization- pollution	2
(b)	Sewage- water pollution	
(c)	Agriculture- reduce water level	
(d)	Industrial run off- Pollution, gloabal warming	
Ans.2(a)	Celebration of world wet land day.	3
(b)	Celebration of world water day	
(c)	Removal of water weeds.	
(d)	Desalting	
(e)	Compost pit and planting tree.	
Ans.3(a)	Programme for repair, renovation and restoration.	5
(b)	National river conservation plan.	
(c)	Plan for Aquatic eco-system	
(d)	Storm water management plan	
(e)	Awareness programms	